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- How Big Are Area Wage Differentials? . 6
- Plant Relocation Employee Problems . 11
- Orange County, California 25
- Important Plant Location News 41
- Manufacturers Record In Review 55
- Science in Site Selection 57
- Fresh Water From the Sea 64
- I.D. Secret Site Service Form 69

LOCATION CONSULTANT YASEEN

Fantus Senior Partner Leonard C. Yaseen presents a strong case for an accelerated pattern of industrial decentralization to meet rapidly occurring changes in population and in market areas (page 17).

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INDUSTRIAL DEVELOPMENT and manufacturers record

Volume 127 September 1958 Number 10

BPA

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SOUTHERN CALIFORNIA

ID/MR IN OUR OPINION...

At the beginning of the summer, we decided to undertake a personal grass-roots survey of industrial development thinking around the country. We wanted to know what site-seeking businessmen were thinking, and we wanted to see what industry-hunting communities were doing.

It's been a busy and interesting summer. We've put about 100 hours on our Cessna, flying to some 150 different cities in about 35 states. We've talked to hundreds of executives in a variety of activities.

We found, first, that businessmen have generally regained their confidence after being shaken up by the recession. Once more, the talk is about new plans, new projects.

If there is any common denominator in current expansion planning, it is increased emphasis on *selectivity*. There's not going to be any pell-mell rush to get new facilities built.

We're in for another round of major growth, but this will probably be the most carefully planned industrial expansion in the nation's history. Every aspect of a new project is going to get a careful once-over from management before the green light is given.

This applies to important new manufacturing plants, distribution facilities, and sales offices. And this critical examination applies particularly to the cities and areas which hope to attract these new investments.

In our summer tour, we visited many cities that are wide-awake, making aggressive, intelligent bids for your new unit. There were towns like Erie, New Bedford, and Newport News, with impressive industrial parks ready to make you an attractive package deal. There were others with new expressways and other demonstrations of civic foresight. You've read, or will be reading our reports on these bright spots.

But there are a lot of towns we visited which we won't be recommending to you. For, in spite of the intense nationwide competition for your new plant, there are still a lot of sleeping cites.

► There's one Western city of 100,000 plus population that still doesn't have a top-flight hotel or motel. We explored no further.

► There's a Florida East Coast town which doesn't bother to attend its airport. After spending 45 minutes looking for someone to fuel our plane, we weren't in the mood to investigate sites.

► There's a Texas town where the chamber of commerce prexy and the industrial manager got into a disagreement during our visit. We decided to wait until they get together before going back.

► There's the Pacific coast city where we asked the local political leader "If we were here to find a site for a $10 million plant and we asked the local government to cooperate with an $80,000 extension of utility lines, what would you say" and he answered "nothing—we don't believe in handouts."

And there's the Midwestern community where a local official told us haughtily "we don't believe in going out and asking people to locate here — if we have what an industry wants, they'll come to us!"

Of course, most of these things are superficial. We know better than to judge a community by one factor or one man. But it's easier than most people think for a trained observer to tell whether a community is "on the ball."

Our technique for a "quickie" look at a town is very simple. We fly in at low altitude and take a general look at physical features—

rail lines, water, industrial areas, major streets, new construction. We land, look at the airport, rent a car, and register at recommended hotel or motel.

Then we drive through each quadrant of the city, looking for signs of alert planning and development. How are new shopping centers designed? Are entrances, space ratios, parking ratios, zoning, OK? What is the condition of schools and other public buildings?

We carry a 700 point checklist in our pocket, but we can begin to form an opinion by the time we check about 25 key points. It's really possible to spot a healthy community—or an unhealthy one—in the space of a few hours.

You're going to be hearing a lot more about these community analyses in future issues, because the outstanding fact we confirmed during our summer survey was that more and more of you are putting amenities at the top of your list of plant location factors. "Is it a good place to live" seems to be a major question everywhere. We're going to try to give you some answers.

* * *

Every group, business, or profession has its rituals and fads. Politicians kiss babies; baseball players spit into their gloves; and disc jockeys play such things as "Wallow Wallow Bing Bang" and "Purple People Eaters."*

In the magazine publishing business one of the time-worn rites is the survey of readers. Questionnaires by the millions are mailed every year to measure the "who, what, when, where, and why" of magazine readership.

While the significance of many surveys made for the purpose of promoting advertising sales may be debatable, they have become a "must" if one is to keep up with the Joneses. Not to be outdone, we recently had a survey made of a good-sized sample of our audience.

For the study, we selected First Research Corporation, a top-flight independent economic consulting group of Miami and New York. First Research queried 2,800 names by random process and obtained 425 completed questionnaires. We think they did a fine, worthwhile job.

They reported, for example, that the greatest percentage of our readers are manufacturers of industrial products. Producers of consumer product rank second, and distributors come in third. Most readers are company heads, followed by corporate officers, then department heads.

Our readers travel mostly by commercial airline but use auto and rail quite a lot. Some 43 percent say their business trips carry them more than 5,000 miles per year, and 25 percent report traveling more than 25,000 miles per year.

An impressive 64 percent of readers own stock either in their own or some other company. From the viewpoint of size, the largest group of readers represent firms valued at over $1 million.

More than half of the respondents say they make the final decision on plant sites or strongly influence the decision. Some 55 percent add that they pass their copy along to some other official in their firm.

But perhaps the most significant fact was that the results did not contain any real surprises. Oddly enough, it seems we're reaching the people we thought we were reaching and their habits are those of the normal corporation official.

—H. M. C.

*Approximate titles—our research department is not hep in this field.

EDITORIAL SURVEYS . . .

and plant location reports

Since before the turn of the century MANUFACTURERS RECORD has issued special studies of specific cities and areas to assist the site-seeking industrial firm. Today, through the combined coverage of INDUSTRIAL DEVELOPMENT and MANUFACTURERS RECORD this tradition of leadership in this field is being extended and carried forward.

Before you go site-seeking, take advantage of background studies which have already been prepared for the areas listed below. Generally, reprints are available gratis.

Area	Publication	Date
Lower Va. Peninsula	(ID-MR)	July, 1958
Mattoon, Ill.	(ID-MR)	June, 1958
Florida Bay Area	(ID-MR)	June, 1958
Western Mississippi	(ID)	May, 1958
Savannah Ga., area	(MR)	May, 1958
Knoxville, Tenn.	(MR)	April, 1958
Charleston, S. C.	(MR)	March, 1958
Dallas, Tex.	(MR)	Feb., 1958
Louisiana	(ID)	Jan., 1958
Cobb County, Ga.	(MR)	Jan., 1958
Arizona	(ID)	Dec., 1957
Pennsylvania	(ID)	Sept., 1957
Canada	(ID)	Aug., 1957
Petersburg, Va.	(MR)	Aug., 1957
Southwest Ga.	(MR)	July, 1957
Charlotte, N. C.	(MR)	Feb., 1957
Meridian, Miss.	(MR)	Jan., 1957
Little Rock, Ark.	(MR)	Oct., 1956
Raleigh, N. C.	(MR)	Aug., 1956
North Carolina	(ID)	July-Aug., 1956
Memphis, Tenn.	(MR)	May, 1956
Jackson, Miss.	(MR)	March, 1956
Chattanooga, Tenn.	(MR)	Feb., 1956

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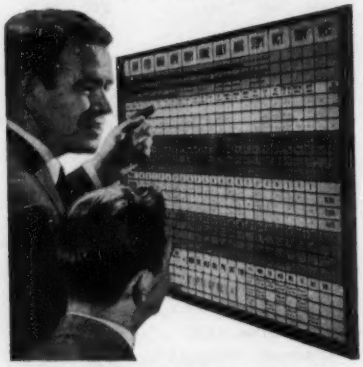

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SIRS: . . . I noted your magazine merger plans, and I hope the results will be most happy. Thought the new BLUE BOOK an excellent job. . . .

JOHN MEBANE
Dudley-Anderson-Yutzy
551 Fifth Avenue
New York, New York

SIRS: Curiosity as well as my desire for accuracy prompts me to inquire as to the source of your population estimates for Charlotte shown on page 10 of the 1958 BLUE BOOK edition of southern progress. Your estimate for 1957 of 236,000 is 22,000 lower than the figure used on page 64. The figure used by Sales Management of 235,900 was corrected in a footnote to read 259,000. Figures for Sales Management for 1-1-58 are 263,300. Figures used by our planning commission are 268,000. (All considerably higher than this estimate.)

Your projected population estimate for 1961 is 263,000, while that of our planning commission is 295,500. . . .

W. M. FICKLEN, Industrial Manager
Chamber of Commerce, Inc.
Charlotte, North Carolina

► **We have contacted our statistician in Washington, Mr. Walker, and he offers the explanation that the figures were estimates made before the final Federal Government data was completed.**

SIRS: We get many requests for data on Mississippi's business volume and industrial production—especially for figures more recent than the 1954 U. S. Census of Manufacturers.

The statistics on Mississippi as compiled on page 58 of your 1958 BLUE BOOK edition, are, we feel, the best data on this subject. We would like to use it to answer these requests.

May we have your permission to mimeograph this data and send it out as a mailing piece for this purpose? . . .

WILLIAM E. KEITH
Director of Information
Mississippi Agricultural & Industrial Board
Jackson, Mississippi

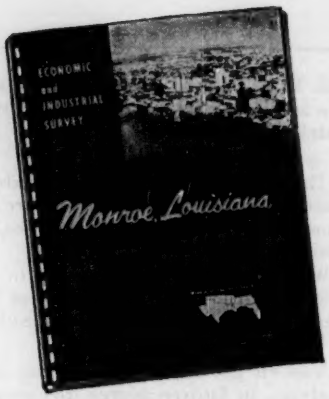
► **Permission granted.**

SIRS: Ron Reifler's article in the June issue of INDUSTRIAL DEVELOPMENT so perfectly describes the advantages to industry not requiring urban locations that we would like to use some quotes from it in the preparation of an area development ad.

. . . We are wondering if you would be willing to grant us permission to so utilize parts of this article.

D. E. STEWART, Manager
Area Development Department
Carolina Power & Light Company
Raleigh, North Carolina

► **Permission granted.**



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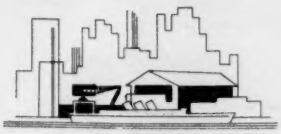

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LETTERS

SIRS: I, for one, was certainly happy at the change in your magazine to include nationwide facilities instead of concentrating on certain sections.

As a matter of fact, I have been looking for a source of information for a long time that would divulge items about new plants, increases and changes of locations for existing plantst, etc. I tried many places without success—and when your magazine came along, it was just what I wanted.

While I believe it is not always possible to do so, could you try to include local addresses when listing firms under the New Plant Summary classification, especially in the cities. Where no local address is given, the Post Office will not deliver, so that important information can be wasted.

Otherwise it is just what I wanted. So, thanks, and keep it coming.

H. BARD
Cutting Room Appliances Corp.
1134 Broadway
New York, New York

SIRS: I read with much interest the June issue of INDUSTRIAL DEVELOPMENT and MANUFACTURERS RECORD. Of special interest to me was the fine story about Mattoon, Illinois.

This series is, no doubt, of invaluable service to industry, when they set out to choose a plant location.

Being an airline, we are possibly a slight bit partial, but we believe that scheduled airline service is of major importance to most companies, when they select a plant location.

We fully realize that there are hundreds of other factors involved in choosing a plant site, but we fell that there is a definite correlation between a city receiving scheduled airline service and the ultimate rise in the economic structure of that city, because new industry is drawn to the city by scheduled airline service.

Again, congratulations on a fine article with an initial approach concerning the importance of scheduled air transportation to the development of a city.

JAY SHADOAN
Weir Cook Airport
Indianapolis, Indiana

SIRS: Your new plant summary appearing in INDUSTRIAL DEVELOPMENT and MANUFACTURERS RECORD has been called to my attention.

I know that we send you press releases on our expansions and I wonder if you could give me some indication as to how good your coverage is.

The summary is very intriguing and we would like to call it to our salesmen's attention if you have a fairly consistent and wide coverage of the business picture.

MATTHEW S. McCAULEY
Director of Marketing Research
Monsanto Chemical Company
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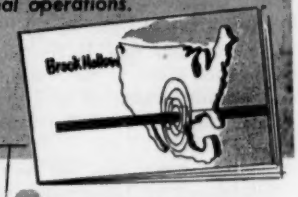

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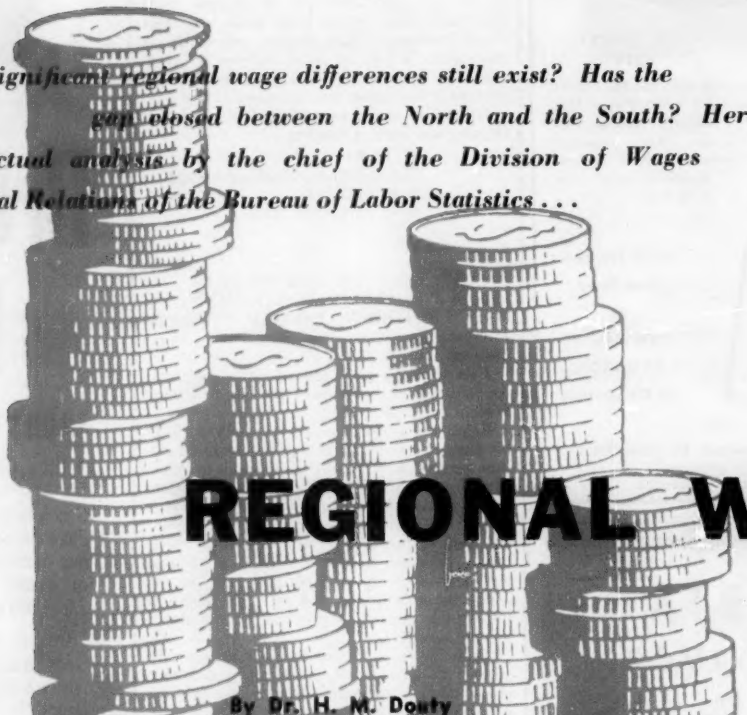
Do significant regional wage differences still exist? Has the gap closed between the North and the South? Here is a factual analysis by the chief of the Division of Wages and Industrial Relations of the Bureau of Labor Statistics . . .



REGIONAL WAGE

By Dr. H. M. Douty

FIFTY-ONE years ago, the Bureau of Labor Statistics collected data on occupational wages in the manufacture of cotton textiles.[1] The average hourly rate in 1907 for female frame spinners in Georgia was 8.7 cents, as compared with 13.8 cents in Massachusetts; the average rates for male weavers in the two areas were 11.6 cents and 17.9 cents, respectively. In general, wage rates at that time in the manufacture of cotton goods in the South fell roughly within a range of 60-70 per cent of New England levels for broadly comparable jobs.

Seven years ago, the New England Conference of Governors appointed a distinguished committee to report on measures required for the survival of the textile industry in the region. The committee reported in 1952.[2] Its first recommendation was that the wage differential between New England and the South should be reduced. In that same year, on the basis of another in the long series of BLS wage studies in cotton textiles,[3] it appeared that female frame spinners earned, on the average, $1.13 an hour in the Southeast and $1.33 in New England; the corresponding figures for male weavers were $1.36 and $1.55. Thus, by 1952, the southern cotton textile rate level approximated 85 per cent of the New England level.

By the late fall of 1954, the differential had declined still further as a result of a series of wage reductions in New England.[4] By early 1957, according to another report of the New England Governors' Textile Committee, wages in cotton textiles were about as high in the South as in the North. The report states that "in fine fabrics there is, indeed, little difference. In the organized mills in the South, wage rates are even at times higher than in the North."[5]

This very brief examination of the course of the wage rate differential between the South and New England in cotton goods manufacture has an interest in itself; it may also be used to illustrate certain problems in the analysis of differentials.

Do Wage Rates Measure Wage Differentials?

Even when the analysis is confined to a particular industry, a real problem of comparing rates of wages for like work operations frequently exists. For example, in the 1954 BLS study of cotton textiles, the average rate for New England was $1.32 an hour and for the Southeast $1.17, a difference of about 13 per cent in favor of New England

TABLE 1

Median regional differences in occupational wage rates in manufacturing industries, by skill and sex, selected periods (Table 1). (Wage rates for corresponding occupations in the Northeast = 100)

Occupational category and period	Median relation to Northeast		
	South	Middle West	Far West
ALL OCCUPATIONS			
1907	86	100	130
1919	87	97	115
1931-32	74	97	113
1945-46	85	101	115
MEN'S OCCUPATIONS			
1907	88	100	131
1919	88	98	117
1931-32	74	97	114
1945-46	84	102	115
MEN'S SKILLED OCCUPATIONS			
1907	93	99	131
1919	95	98	(1)
1931-32	83	96	(1)
1945-46	91	101	113
WOMEN'S OCCUPATIONS			
1907	(1)	(1)	(1)
1919	81	92	(1)
1931-32	73	(1)	(1)
1945-46	87	98	114

[1] Number of occupations covered too small to justify selection of median.
SOURCE: Joseph W. Bloch, "Regional Wage Differentials; 1907-46," Monthly Labor Review, April 1948, pp. 371-377.

DIFFERENTIALS

workers. But for mills in the two areas producing fine cotton fabrics, the respective averages were $1.31 and $1.27, a difference of only 3 per cent.

In simple, the precise measurement of regional differentials in wages should be in terms of comparable jobs or work operations. In practice, the available data are often such that rough approximations of job comparability must be used. For some purposes, of course, other measures of wage and income differentials, unrelated to types of work, are useful and important.

Historically, wage differentials, in the precise sense described above, have been stated in terms of differences in rates of pay per hour or for some other time period. In recent years, compensation systems have become increasingly complex through the addition of benefits that yield added income, leisure, or security to employees and involve added cost for employers. Expenditures on such benefits clearly should be taken into account in the measurement of differentials. For example, the available evidence suggests that employee benefits in cotton textiles are more liberal in New England than in the South. This would tend to increase the differential as measured in terms of wage rates. In general, quantitative data by industry on employer expenditures on benefits are meager, and hence this factor can be only roughly appraised.

A wage differential does not necessarily reflect a labor cost differential. In terms of cost, a higher wage level in one region as compared with another may be offset wholly or in part, depending on productivity experience in the two areas. If output per man-hour in New England fine cotton goods mills were 10 per cent greater than in the South, then, at present wage levels, the South would be at a labor cost (efficiency wage) disadvantage.

Is There a General Wage Differential?

Despite all the difficulties of measurement, the widespread view that wages for comparable work tend to be lower in the South than elsewhere appears to have substance. But this generalization admits of many qualifications as applied to particular industries and occupational groups. In cotton textiles, as we have seen, the differential has greatly contracted and perhaps disappeared. Some of the other exceptions will be noted at later points in the article.

The evidence pointing to a *general* differential in wages between the South

and the rest of the country can be dealt with in only the most summary fashion.

About ten years ago, the Bureau of Labor Statistics attempted to construct a general measure of regional differentials in occupational wages in manufacturing for four periods beginning with 1907 and ending with 1945-46. The basic results of this study are shown in table 1. It will be noted that, in 1945-46, wages in the South in manufacturing appeared, on the average, to be about 15 per cent below wages in the Northeast for all occupations combined. One of the striking aspects of this study was the comparative stability (except for the Far West) of relative wage levels among regions over the 40-year period from 1907 to 1946.

A current measure of the general wage position of the southern region in manufacturing, similar to that for 1945-46, does not exist. The past decade of full employment and great economic expansion may have witnessed some alteration in the relative level of wages in the South. The available evidence, although not voluminous, suggests that a measurable differential continues in effect. This judgment is based upon data developed in the past several years in a variety of BLS occupational surveys in manufacturing industries.[6] Limitations of space preclude any effort at the statistical summary of these data.

The impression of the existence of a general differential is reinforced by information obtained for selected labor markets in various parts of the country in connection with the Bureau's programs of community and union scale surveys.[7] The latter studies are particularly interesting in this regard, for they reflect negotiated rates based on local collective bargaining. Table 2 shows union scales as of July 1, 1956, for three craft jobs and for laborers in building construction in selected cities. With some exceptions, the southern scales are below the scales negotiated in cities outside the South, even when comparison is confined to cities of similar size. The differentials for laborers are especially conspicuous.

Union wage scales in selected building trades, selected cities, July 2, 1956 (Table 2).

City	Bricklayers	Carpenters	Electricians	Building laborers
SOUTH				
Atlanta	$3.350	$2.800	$3.100	$1.450
Birmingham	3.500	2.600	3.175	1.500
Charlotte	3.000	2.250	2.700	1.275
Dallas	3.700	2.875	3.125	1.550
Houston	3.688	2.975	3.250	1.750
Jacksonville	3.100	2.600	3.200	1.150
Knoxville	3.350	2.725	3.000	1.625
Little Rock	3.400	2.750	2.875	1.250
Louisville	3.400	3.000	3.300	2.000
Memphis	3.750	2.550	3.000	1.400
New Orleans	3.175	2.600	3.025	1.475
Richmond	3.250	2.300	2.850	1.400
San Antonio	3.375	2.750	3.125	1.375
REST OF COUNTRY				
Boston	3.500	3.050	3.200	2.300
Buffalo	3.570	3.315	3.500	2.485
Cincinnati	3.600	3.275	3.500	2.350
Cleveland	3.550	3.575	3.600	2.825
Columbus (Ohio)	3.500	3.000	3.280	2.100
Dayton	3.600	3.100	3.460	2.260
Denver	3.625	2.975	3.000	2.000
Des Moines	3.650	3.000	3.200	2.250
Erie	3.450	3.150	3.250	2.250
Grand Rapids	3.450	2.875	3.200	2.100
Indianapolis	3.625	3.225	3.350	2.200
Kansas City	3.700	2.900	3.200	2.155
Milwaukee	3.400	3.150	3.050	2.375
Minneapolis-St. Paul	3.425	3.000	3.120	2.250
New Haven	3.250	3.100	3.250	2.350
Omaha	3.375	2.925	3.150	2.000
Portland (Ore.)	3.500	2.800	3.100	2.250
Providence	3.325	2.725	3.000	2.075
Rochester	3.510	3.250	3.370	2.490
St. Louis	3.750	3.250	3.500	2.300
Scranton	3.125	2.750	3.100	2.025
Seattle	3.550	2.800	3.100	2.370
Springfield (Mass.)	3.275	2.825	3.050	2.075
Syracuse	3.425	3.045	3.500	2.275
Toledo	3.510	3.325	3.400	2.520

SOURCE: U. S. Bureau of Labor Statistics.

Variations by Occupation

Although the general level of wages in the South appears to continue to be somewhat lower than elsewhere, the structure of differentials exhibits great variety. In a study published in 1930 that can still be read with profit, Professor Clarence Heer thus described the southern wage structure:

> The difference in hourly earnings between the South and the rest of the country is apparently at a maximum in the case of common labor and shows a tendency to become progressively less with each advance in the grade of skill. In the case of one or two highly skilled occupations it disappears entirely. This tendency . . . is strikingly evident . . . in industries in which there are broad differences in skill as between various occupational groups and in which passage from one group to another is difficult.[8]

The tendency for the differential to vary with skill, which is crucial to an understanding of wages in the South, is illustrated by the 1956 data on union wage scales in construction shown in table 2. Thus, the union rate for bricklayers in Atlanta ($3.35) was 96 per cent of the Boston level ($3.50); building laborers in Atlanta, however, received 63 per cent of the Boston scale ($1.45 as against $2.30). The Dallas scale for bricklayers exceeded the Boston scale, while Dallas laborers received only 67 per cent of the Boston rate. In the dyeing and finishing of cotton fabrics, highly skilled machine printers averaged $4.03 an hour in New England in April 1956 as compared with $3.75 in the Southeast.[9] The differential against the South was only 7 per cent; moreover, the southern average for this occupation exceeded the average in the Middle Atlantic States by about 20 per cent. For material-handling laborers, however, the differential against the South was about 26 per cent (New England) and 21 per cent (Middle Atlantic). These examples could be multiplied by reference to other industries.

There is some evidence to suggest that pay levels for white-collar occupa-

tions in the South correspond more closely with levels elsewhere than is the case for manual workers. Table 3 shows relative pay levels in 1955-56 for selected office occupations in four southern labor markets and in thirteen markets in other parts of the country. The Atlanta level for men and women combined was about 9 per cent below the New York level, but above the levels in Philadelphia, Providence, and Minneapolis-St. Paul. It was in line with Denver. The level of salaries for male office workers either equaled or exceeded the New York level in three of the four southern cities.

Table 4 shows similar data for selected occupations in three categories of nonoffice employment. It will be observed that pay levels in 1955-56 for maintenance (skilled) occupations in the southern areas as compared with outside areas were relatively higher than the levels for custodial or material-handling occupations. The *relative* position of the latter two groups indeed compared unfavorably with that of women office workers in the South. The comparisons for both office and nonoffice workers are affected by differences in the "industry mix" in the several areas, and probably by differences in city size. But the data do provide some general insight into the structure of regional pay differentials are related to job skills.[10]

Variations by Industry

Not only does the southern wage differential tend to differ among occupational groups classified by skill; it tends also to differ by industry. Professor Lester has emphasized the diversity among industries, and among plants within industries, in the size of the differential.[11] Earlier in this article, the course of the differential in cotton textiles was briefly explored. In this case, in effect, the southern wage level has come largely to determine the wage level elsewhere, due to the predominance of the industry in the South. The same situation exists in seamless hosiery and several other industries.

Coal mining represents a conspicuous case in which regional wage differentials in a highly competitive industry have been sharply curtailed through collective bargaining. Day-rate differentials between northern and southern Appalachian operators were eliminated in 1941; district differentials for tonnage workers, who have declined greatly in importance, have been diluted by the across-the-board application of post-

Relative pay levels for office workers, 17 labor markets, winter 1955-56. (Table 3.)
(New York City = 100)

Labor market	All industries		
	Men and women	Men	Women
NORTHEAST			
Newark—Jersey City	98	107	97
New York City	100	100	100
Philadelphia	89	98	88
Providence	84	102	82
SOUTH			
Atlanta	91	100	90
Dallas	90	101	89
Memphis	85	101	83
New Orleans	81	92	80
MIDDLE WEST			
Chicago	104	111	103
Detroit	106	118	104
Milwaukee	94	107	93
Minneapolis—St. Paul	90	100	88
St. Louis	94	105	93
FAR WEST			
Denver	91	96	90
Los Angeles—Long Beach	106	112	105
Portland	99	109	97
San Francisco—Oakland	104	110	103

SOURCE: U. S. Bureau of Labor Statistics, Bulletin No. 1188, *Wages and Related Benefits, 17 Labor Markets, 1955-56*, p. 31.

Relative pay levels for plant workers in indirect jobs, 17 labor markets, winter 1955-56 (Table 4).
(New York City = 100)

Labor market	All industries		
	Maintenance	Custodial	Material movement
NORTHEAST			
Newark—Jersey City	104	105	110
New York City	100	100	100
Philadelphia	99	94	96
Providence	84	86	85
SOHTH			
Atlanta	90	77	78
Dallas	89	75	77
Memphis	90	72	73
New Orleans	89	59	68
MIDDLE WEST			
Chicago	110	106	103
Detroit	110	112	109
Milwaukee	103	102	106
Minneapolis—St. Paul	103	100	102
St. Louis	104	96	100
FAR WEST			
Denver	97	92	94
Los Angeles—Long Beach	106	106	107
Portland	106	106	106
San Francisco—Oakland	108	115	115

SOURCE: Same as Table 3.

war wage increases.[12].

Union pressure has also been important in reducing or eliminating differentials in a variety of companies with interregional locations. United States Steel is a good example. In 1946, the minimum plant rate at the Alabama facilities of the company was 17.5 cents an hour below the corresponding rate at its northern subsidiaries. This differential, in a series of steps, was eliminated by 1954. Among the plants of the major meatpacking companies, to give another illustration, regional wage differentials have been sharply reduced in recent years.

In organic and inorganic chemical manufacturing the Southwest, reflecting the great development along the Gulf Coast, has the highest level of wages in the country, although the familiar tendency for wages in unskilled occupations to be relatively low is still evident.[13] Chemical wages in the Southeast, on the other hand, tend on the average to be lower than in the Southwest or in most other regions.

In many industries, in fact, a substantial wage differential continues to exist between the South and the rest of the country. As we might expect, the differential is most conspicuous in those industries in which relatively unskilled or semiskilled labor forms a large proportion of the work force. An example is in the manufacturer of brick and hollow tile, where wages in the South averaged 99 cents an hour in the spring of 1954 as compared with $1.43 in the industry as a whole.[14] The exception is found in a few industries, such as seamless hosiery, of which only remnants remain outside the southern region.

Enough has been said to indicate that the concept of a "Southern wage differential" is exceedingly complex. There undoubtedly is, in a general sense, a differential. It is not uniform. For some industries and for some occupational groupings, it has practically ceased to exist. Indeed, the wages of some workers in the South, on the average, exceed the levels prevailing in other parts of the country for similar work.

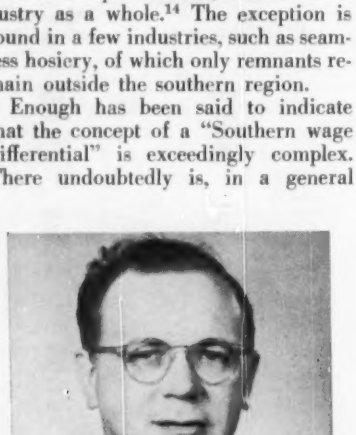
The persistence of a general differential in wages reflects the underlying labor supply situation in the southern region. For many years, the natural rate of population increase in the South has been considerably greater than in the remainder of the country.[15] This has been due largely to higher fertility in the predominantly rural South.

Differential population growth has created great pressure on economic opportunities in the region. Relatively low returns in agriculture, coupled more recently with dramatic advances in farm mechanization,[16] have propelled large numbers of workers in the productive age groups to seek urban employment. By and large, it is these relatively unskilled entrants into the industrial labor market that depress the level of wages over wide reaches of employment in the region.

But wage differentials, as we have seen, are not static. The existence of a general regional wage differential sets up forces that tend to reduce or remove it. The key is mobility—the movement of capital into the area in which wages are relatively low or the movement of workers into higher wage areas. Historically, both of these processes have been plainly evident in the South.

The growth of nonfarm employment in the South since 1880 has been more rapid than in the rest of the country. At the same time, the net movement of population out of the South has been substantial.[17] It is these developments which, in the long run, provide the underlying condition for alteration in the structure of regional wage differences. Institutional factors, such as trade unionism and minimum wage legislation, have a role to play within the general framework of demand-supply relations in the southern labor market.

The persistence of a general wage differential in the South reflects, at least in substantial measure, the imperfections of labor and capital mobility. It may be worth pointing out, however, that even with perfect mobility some differences in regional wage levels for comparable work might continue to exist. They might be due, as some studies show, to differences in the cost of living among areas, to the indirect attractions (climate, etc.) of living in one locality rather than another, or to differences in efficiency.



Dr. H. M. Douty, a native of Baltimore, received his A.B. degree from Duke University, his M.A. from Columbia University and his Ph.D from the University of North Carolina. After holding teaching positions in economics at UNC, Dr. Douty joined the U. S. Department of Labor in 1939. He has been chief of the Division of Wages and Industrial Relations, Bureau of Labor Statistics, since 1947. He is the author of numerous monographs and articles in the fields of wages, industrial relations and labor economics. Dr. Douty's study on wage differentials is reprinted from Georgia Business, publication of the Bureau of Business Research, College of Business Administration, University of Georgia.

1 U. S. Bureau of Labor Statistics, Bulletin No. 128, *Wages and Hours of Labor in the Cotton, Woolen, and Silk Industries, 1890-1912* (Washington, 1913).

2 Committee appointed by the Conference of New England Governors, *Report on the New England Textile Industry* (1952).

3 U. S. Bureau of Labor Statistics, *Wage Structure: Cotton and Synthetic Textiles, March 1952.*

4 U. S. Bureau of Labor Statistics, *Wage Structure: Cotton Textiles, November 1954.*

5 *New England Textiles and the New England Economy* (March 1957), pp. 1-5.

6 Household Furniture (1954); Men's and Boys' Dress Shirts and Nightwear (1954); Structural Clay Products (1954); Leather Tanning and Finishing (1954); Synthetic Textiles (1954); Cigar Manufacturing (1955); Machinery Industries (1954-55); Industrial Chemicals (1955); Textile Dyeing and Finishing (1956).

7 Building Trades, Printing, Local Transit, and Local Trucking. These studies are done annually.

8 Clarence Heer, *Income and Wages in the South* (Chapel Hill: University of North Carolina Press, 1930), p. 35.

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10 See also on this question of regional pay differences by skill the study by Lloyd Saville, "Earnings of Skilled and Unskilled Workers in New Engand and the South," *Journal of Political Economy*, October 1954, pp. 390-305.

11 Richard A. Lester, "Diversity in North-South Wage Differentials and in Wage Rates Within the South," *Southern Economic Journal*, January 1946, pp. 238-262.

12 For an excellent analysis of the consequences for southern coal production of the narrowing of the North-South wage differential, see Gerald G. Somers, "Effects of North-South Wage Uniformity on Southern Coal Production," *Southern Economic Journal*, October 1953, pp. 121-129.

13 U. S. Bureau of Labor Statistics, *Wage Structure: Industrial Chemicals, August 1955*, tables 8-9.

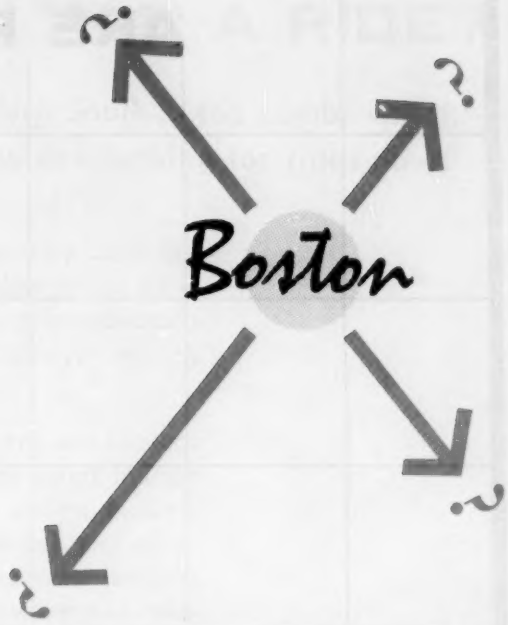
14 U. S. Bureau of Labor Statistics, *Wage Structure: Structural Clay Products, May 1954*, table 3.

15 For a general analysis of the southern labor supply problem, see U. S. Bureau of Labor Statistics, Bulletin No. 898, *Labor in the South* (1947), Section 11.

16 See James H. Street, *The New Revolution in the Cotton Economy* (Chapel Hill: University of North Carolina Press, 1957).

17 For an analysis of changing patterns of nonagricultural employment between 1939 and 1953, see Seymour L. Wolfbein, "Changing Geography of American Industry," *Monthly Labor Review*, July 1954, pp. 739-743. Recent population movements in the Sixth Federal Reserve District (Alabama, Florida, Georgia, Louisiana, Mississippi, and Tennessee) are described by Leon T. Kendall, "People on the Move," *Monthly Review*, Federal Reserve Bank of Atlanta, March 1957.

If you decide to move your plant, or if you're forced to relocate because of thruway construction or urban renewal activities, remember that your employees must be given careful consideration. It's important to give them the information they want when they want it. Here's how one firm moved its entire facilities with a minimum of difficulty . . .



Keeping Employees Happy During Relocation

By Francis J. Rodericks

AT Chilton Greeting Company, we were faced with the problem of relocating our plant when the Commonwealth of Massachusetts decided to tear down our buildings to make way for the Expressway in Boston.

Since we publish Christmas cards, primarily, our employment of people is of a seasonal nature. We employ a high percentage of unskilled female help who must, however, be literate in their own language. These same female employees must possess a fairly high degree of finger dexterity and arm and hand coordination in order to assemble and pack greeting cards. Also, we wanted to remain within a 150 mile radius of Boston since a fair amount of our business is in the New England area.

We also preferred that our new location be fairly central to the three printing plants which print all of our cards. Inasmuch as we are in the direct selling business it is imperative that we continue to give our dealers excellent service. Incidentally, for those of you who may not understand the term "direct selling" I can perhaps use this simile; what the Fuller Brush Company is to brushes, Chilton Greetings Company is to Christmas cards.

The final decision is extremely important. Once made, it cannot be corrected without serious loss of investment, production losses, dealer and customer dissatisfaction, disruption of employee morale, and many other difficulties.

There is no set and uniform procedure that is followed by all companies. As a matter of fact, my outline of factors to be considered could be taken by any one of you and completely reshuffled into an order that would be more accpetable for your own company's move.

Personnel Factors

Factor 1—Labor Pool

Any analysis of the quantity of labor available is not always confined to the community itself. A careful investigation should be made of the potential labor pool within areas five to fifteen miles (ready commuting distance) from the community under consideration. The Commonwealth of Massachusetts publishes a Monograph for each city and town which contains an excellent analysis of labor pool facts. It is possible that the department of commerce in your state has such information available.

The labor pool should be broken down into age groups. This is important to any company since some jobs require that employees must stand up most of the day, other jobs require a high degree of finger dexterity and some require excellent eyesight.

Although there may be an adequate supply of labor in surrounding areas, there must also be sufficient incentive for this labor to travel to the community you might be considering. One company that I know of made some excellent surveys of the labor pool within commuting distance of the area that they selected but only a small percentage of this potential came to work in their plant. The answer was that the

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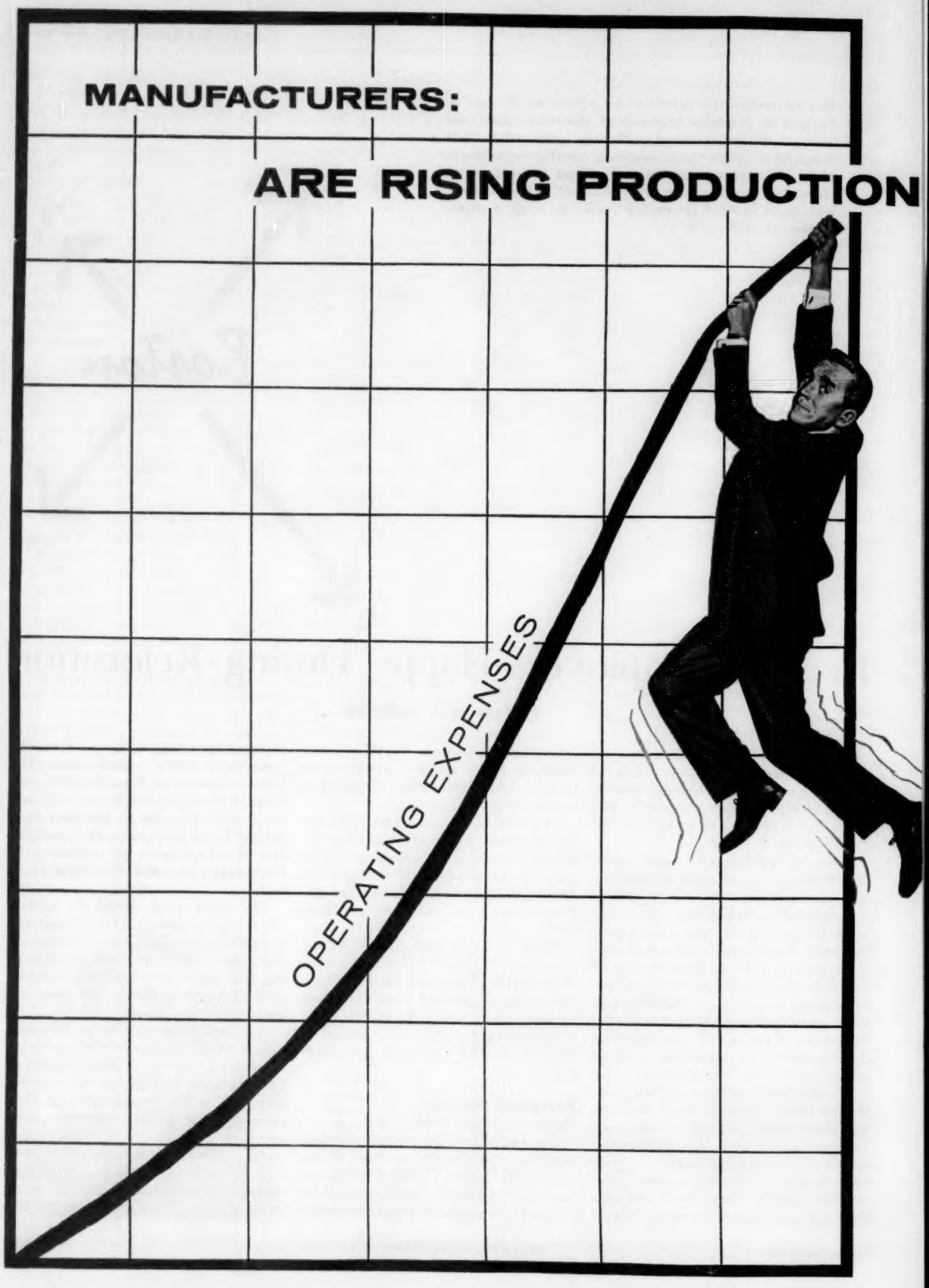

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people did not feel that the five or ten mile ride every day was worth the few extra dollars at the end of the week.

The car-pools bringing in labor from surrounding communities can also be troublesome. If the driver is taken sick there might be as many as five other people absent for the day.

Another company, with whom I talked, was having trouble bringing in help from outside the community. It developed that the woman had difficulty getting the family off in the morning before they left for work. Other complaints were that they arrived home too late in the afternoon.

In our own case, we had to be sure that there was sufficient female help available but other companies may require more male help. Therefore, a complete analysis of the labor pool is very important.

There was one community that we had almost decided would be ideal. However, it developed that there were three other companies with seasonal characteristics similar to ours. You can well imagine the fierce competition that would develop for whatever help was available.

Sometimes the very seasonal nature of a business can be an asset. There are quite a few married women who like to work for about four months prior to Christmas to earn extra money. We are fortunate to be in such an area. You might raise the question "but doesn't this tend to put you in a bracket where you pay the maximum percentage of payroll to the Division Employment Security?" It may seem strange but we pay only 1.7% whereas the maximum in Massachusetts is 2.7%. This, I believe, is due to the fact that the temporary employees do not earn at least $500.00 in the 52 weeks prior to being laid off. It is possible that other states may require that an employee must earn more or less than $500.00 in order to qualify for unemployment compensation.

Another reason why we may not pay the maximum percentage of 2.7% can be the fact that the employees whom we lay off are able to find work with some other company and so never apply for unemployment compensation.

Because we employ some young fellows for about four months of the year, I found it advantageous to check with the juvenile delinquency rate in the communities under consideration. Usually, a higher rate indicates the possibility that some troublesome fellows might be hired.

In our own investigations, I found some interesting statistics, relating to the quality of the labor supply when I checked the percentage of pupils graduated from high school and college. It was really amazing to note the relationship between communities considered desirable and those considered undesirable and the percentage of high school graduates.

It is possible to obtain the employee turnover rate for any community from either the State labor department or the Division of Employment Security. This rate can be indicative of several things. It might show that the labor force is steadily employed. This would indicate that your company would have to take employees away from companies already in the area or that you would have to recruit from surrounding areas. On the other hand, it might show that the labor supply in the area can be utilized for peak season work. It is well, in any event, to check the employee turnover figures and reasons for at least the past five years for the com-

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munity.

Other companies may feel that some other factors may be important. For example; number of community and professional organizations, number of homes owned and rented and the maintenance of homes and yards in the community.

Factor 2—Compensation Level

From the company standpoint, the level of wages and salaries paid in the community is very important. There are many organizations and companies who regularly conduct such surveys. The Division of Employment Security in the community has available the minimum and maximum hourly rates for almost every company in the area. One of the best salary surveys that I have seen is published by the National Office Management Association.

These surveys can also serve a very useful purpose in an analysis of the trend of hourly rates and salaries over the past five years. It is desirable that you know the reasons for any upward trend. Such a trend may be due to the cost-of-living or it may be due to competition for the available labor force. I well remember one town that seemed to be fairly satisfactory in most factors. However, while I was checking wage rates, the discussion revealed that a big insurance company would be moving into the adjacent community. Everyone felt that the next survey would show much higher rates than were being paid at the present time.

Another item that has a great deal to do with the compensation level is the matter of fringe benefits. As you people know, the fringe benefits can add about $.28 per hour to the wage rate.

In addition to checking wage rates, careful analysis should be made of the various bonus or incentive systems being paid in the area. This was important to us since we pay some of our employees on an incentive basis.

There are some other factors that should be considered such as; relative price levels in the stores in the community as compared with your present location, competitive shopping opportunities and an analysis of the standard of living.

Cost of Moving Employees

When a company moves to another area, the employee has little choice of action. He can either accept the company's invitation to move with it or to terminate his employment. In either case, it sets in motion numerous personnel and cost problems. The personnel policies that are decided upon in connection with the relocation of the company could easily affect the decision of employees to move or to end their services with the company.

Most companies have found it advantageous to give their employees ample notice of an impending move to a new area in order to stop disruptive rumors. This also allows the employees plenty of time to get accustomed to the idea and make plans of their own in connection with the move.

At Chilton Greetings Company, we kept our employees informed of our progress by bulletin board notices and letters sent to their homes.

Depending on the distance involved in the move, many companies will allow at least one trip to the new community for the employees and their families and possibly a second trip to look for living quarters. The policies followed by companies in such matters vary a great deal. Some excellent surveys have been made by the American Management Association and the National Industrial Conference Board.

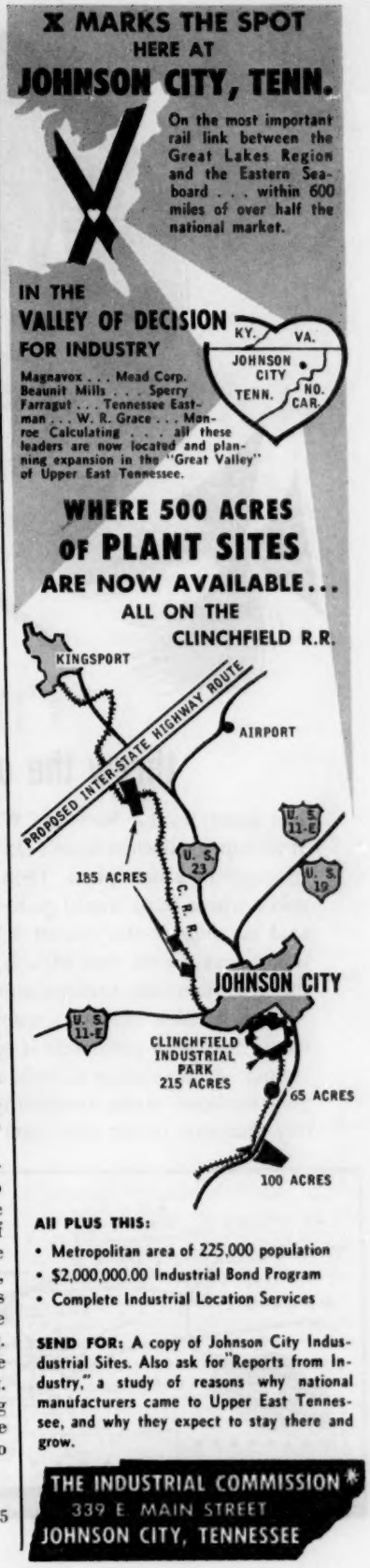
In most cases, companies will assist employees in their search for new housing by having a qualified representative in the new community. This representative may be a real estate broker or an employee assigned full time to furnish help and counsel to the employees during the moving period.

Some companies will reimburse employees for losses incurred through unexpired leases or losses incurred in selling their old homes or will furnish direct loans to employees to help them purchase new homes. Other companies will simply make a lump sum allowance to cover interim re-settlement expenses.

In the surveys mentioned, a large percentage of the companies stated that they paid the full cost of packing, transporting, unpacking the furniture, etc. of executives, supervisory, technical, professional and clerical personnel.

Most companies provide for termination payments graduated according to the employee's length of service to the company. An important objective of termination pay is to prevent or ease any hardships. Another consideration, of course, is to keep as many employees as possible so that production may be maintained up to the time of moving.

There is another cost that should be considered in the re-location of a plant. That is the recruitment and training costs for new employees to replace the employees who have decided not to move with the company.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U. S. 23
U. S. 19
185 ACRES
C. R. R.
JOHNSON CITY
U. S. 11-E
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65 ACRES
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THE INDUSTRIAL COMMISSION
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JOHNSON CITY, TENNESSEE

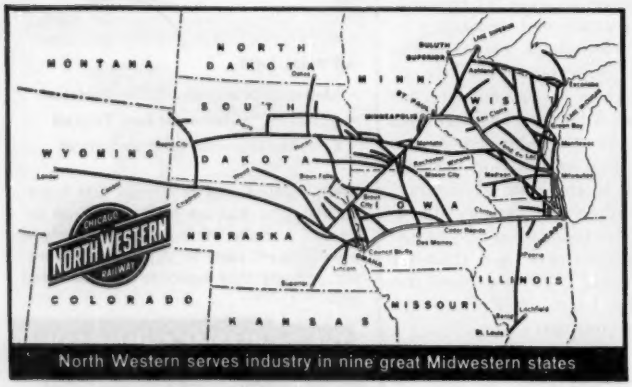
GUESS WHO

threw the overalls in the plant site chowder?

Not sweet, lovable Susie Q.? Well, not exactly. It all happened when Susie's Dad was appointed manager of a new plant. Then when Mrs. Q. asked where Susie would go to school, Mr. Q. said he *thought* the nearest school was eight miles away. Down went Mrs. Q.'s foot. Loss to the new plant: one brilliant manager.

Basic trouble here was, company management, busy with construction plans, neglected "minor" details such as schools, churches, shopping facilities, home availability and community reception of the new plant.

It's an example of the many considerations in the selection of the "right" plant site. One sure way of reducing the factor of oversight is to consult with North Western's Industrial Development Department *before* selecting a location. Accurate, up-to-date information on plant sites is our business. Experts in many fields, such as legal, marketing, labor, public relations, engineering and transportation furnish detailed, authoritative facts on the best sites in nine states. Why not use North Western service . . . there is no obligation!



North Western serves industry in nine great Midwestern states

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Chicago and North Western Railway
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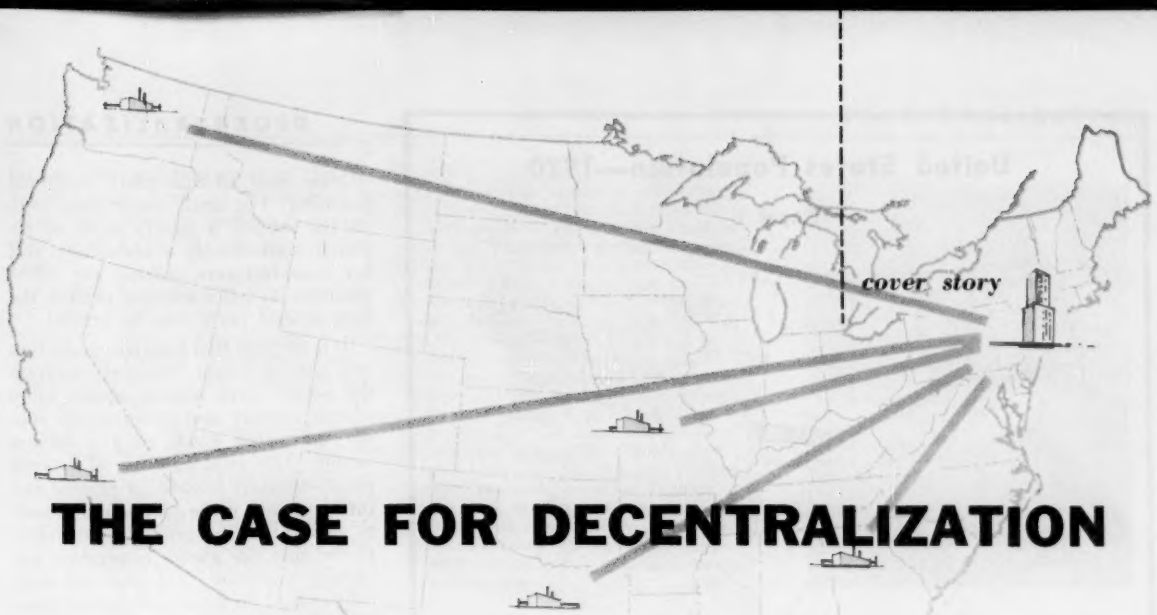
Chicago 6, Illinois

CHICAGO AND NORTH WESTERN RAILWAY



THE CASE FOR DECENTRALIZATION

"The establishment of branch plants carefully located for present and future growth is the only sound answer to survival in the bitterly competitive period that lies ahead."

By Leonard C. Yaseen

NEW YORK. A great deal has happened since I started to work at plant location twenty-five years ago. "Industrial decentralization" was then just an interesting catch phrase, and locational decisions were usually based on the best real estate deal.

Gradually, management has awakened to the true implications of the science of economic geography.

Some compelling changes have occurred in the past two generations, and they may help us formulate the far-reaching management decisions of the future.

Along with many overwhelming developments, there has been a worldwide explosion in population. In the United States, heavy migration to under-developed areas, coupled with natural increases, has radically changed regional economic, social and even political characteristics.

In 1920, the population and industrial heart of the United States was composed essentially of the north central and eastern states. This traditional manufacturing belt encompassed approximately one-half of the nation's total population and held the vast majority of our industry. Value added by manufacture accounted for more than three-fourth of the nation's total.

Today, 78 million persons populate this region but 93 million live in the west and south. In just seven years, 17 million more people will reside outside this concentrated northern area than live within it.

Since 1920, the number of residents of California and Florida has tripled. California now boasts 14 million persons, Florida four million, Texas over nine million.

Some extremely interesting things have happened because of this huge migration. If you manufacture automotive products, you know that today more automobiles are used and more gasoline is sold in Los Angeles than in Chicago and New York combined. More drugs are retailed in Los Angeles than in any other city in the United States today. More lumber, hardware and building materials are purchased annually in Los Angeles County than in any other county.

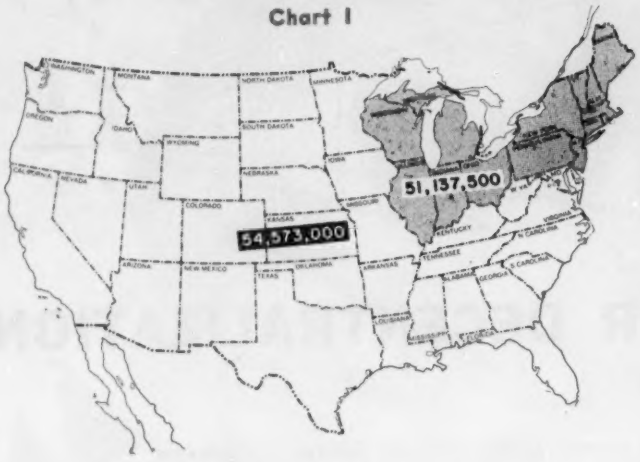
If your products are sold to industries rather than directly to consumers, you will certainly want to maintain modern facilities in the heart of the country, but you cannot overlook the fact that the old industrial concentrations must now share purchasing power with newer regions. In 1939, the traditional area held 69 per cent of all employees in manufacturing establishments, but by 1958, the west and south represented close to 40 per cent of all industrial jobs.

Significantly, almost every new industrial job created in the eastern or central states is now counter-balanced by hiring of another production worker in the west or south.

Total expenditures for new plant and equipment indicate an equally impressive record. Every year for the past eight years, manufacturers spent more for expansion in *each* of the states of California and Texas than all the New England states combined. During 1955, new plant expenditures were $1.4 billion in the Southern states east of the Mississippi river, almost equivalent to the expenditure of $1.5 billion in the Middle Atlantic census region composed of the highly industrialized states of New York, New Jersey and Pennsylvania.

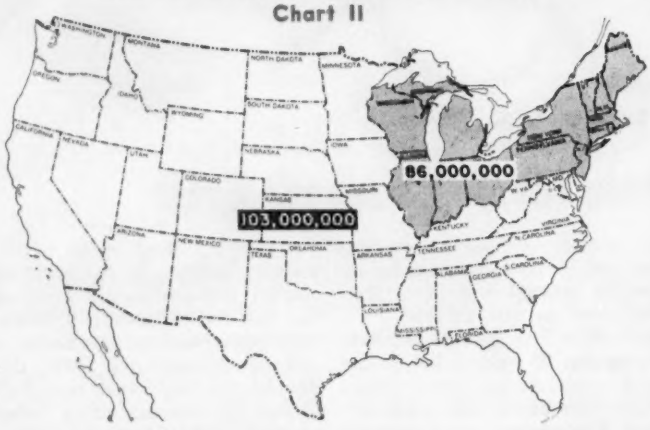
United States Population—1920

Chart I



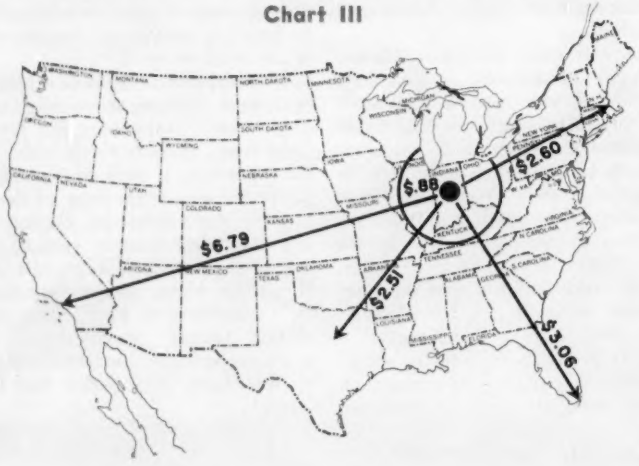
United States Population—1965

Chart II



Freight Costs of 100 Lbs. of Electrical Devices Shipped to Local and National Markets

Chart III



How does all this affect locational planning? For small, single plant companies serving a purely local or regional market, only academically. But for manufacturers making any effort whatever to sell a national market, the next several years may be crucial.

It is obvious that a single production unit can no longer effectively saturate the nearly three million square miles of this country and economically supply fabricated goods to 175 million people. The establishment of branch plants carefully located for present and future growth is the only sound answer to survival in the bitterly competitive period that lies ahead. Experience has proven, moreover, that units, strategically spaced for maximum market penetration, are actually easier to run than a large centralized plant.

The president of a company for whom Fantus has located a number of decentralized operations recently said, "small plants simplify the management job, cut the cost of management and provide a built-in means of management development. Costs are reduced because the kind of men who can manage a small operation are far more plentiful than those needed in larger plants. Companies with plants of 2,000 or 3,000 men pay up to 100 per cent more for their personnel directors than we do."

In considering the geographic implications of mass relocation of people and industry, and the effect on total delivered-to-customer manufacturing and distribution costs, let us consider an actual case history from Fantus files. A moderate-sized metal working firm with 400 employees in the New York area found that its profit margin on total gross sales of $10 million was only 8.5 per cent before taxes, and declining.

When we began our locational study in 1954, shipments of this company were geographically divided, with about 60 per cent of sales in the traditional manufacturing belt and the balance distributed throughout the Southeast, West and Pacific Coast. Declining profits were directly attributable to increased transportation costs, higher and higher labor rates, congested plant layout and heavy sales expenditures in remote markets due to competitive price pressures.

By examining their marketing structure, it was estimated that setting up a branch plant in the Missouri River Valley could accomplish economies of 20 per cent, or $80,000 in total out-

bound transportation costs to the national market. Regional differentials in wage rate patterns indicated payroll savings of $199,000, or about 11 per cent.

Freeing up congested floor space in the main plant, lower workmen's compensation rates on that portion of the transferred payroll and related economies would account for additional savings of $52,000.

A building was constructed on a long-term, state financed basis and, by the end of 1957, profit margins had increased to over 12 per cent. Labor training costs had been absorbed, annual production and distribution economies exceeded our original estimate of $332,000, a new product research department had been organized and sales within the area served by the new unit increased 21 per cent.

This revitalization process was accompanied by a series of intangible benefits which I should like to review later because of their universal application.

The case history we have discussed briefly is typical of medium size, single plant operations. But every company today may well be concerned with rising costs and future competitive position.

Distribution Costs

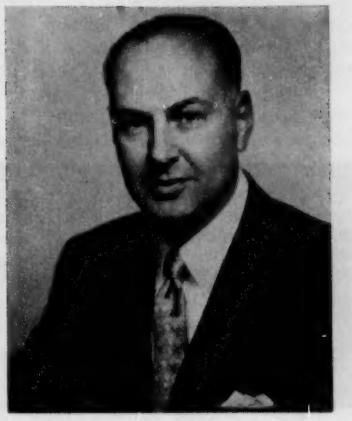
Spiraling increases in distribution costs, for example, tend to foster the growth of competition in localized markets. High freight costs have raised a protective umbrella for small sub-regional producers so that, despite their lack of volume production, they can offer lower delivered price and better service.

Since World War II, railroad operating costs have increased sharply—and accordingly, freight rates have increased at a faster pace than prices. Since the base period 1935-39, retail prices on all commodities have advanced about 117 per cent. In direct contrast, class rates applicable between New York and Chicago have gone up 171 per cent.

The treasurer of a sizable company located in central Indiana recently said to one of our partners, "yes, our outbound transportation bill last year was high (almost $650,000) but it still represents only 2½ per cent of our sales dollar."

Within a 200-mile circle of this plant, freight costs actually averaged less than 1.0 per cent of over-all costs. What this treasurer didn't quite realize was that, for every dollar of merchandise shipped beyond that radius, the company was paying an average of 4 per cent for distribution—as high as 7 per cent on some shipments.

Leonard C. Yaseen is senior partner of Fantus Factory Locating Service, New York. In his position he has been instrumental in locating 1,600 large plants in the continental United States and abroad. Among these are some of the best known names in American industry. Mr. Yaseen is also president of Fantus Area Research, a division which conducts scientific industrial development studies for communities, railroads and utilities. He is author of Plant Location, a standard text utilized in major business and engineering schools, along with the plant location chapter in the new McGraw-Hill Engineering Handbook, and numerous articles, speeches and reference background data appearing in many national publications.



And a great deal of merchandise was being shipped beyond the 200-mile radius. The company's largest single sales area lay at the eastern extreme of its national market, and the fastest growing sales area lay at the southwest and western extremes.

As a result, profits on many shipments beyond favorable freight zones were practically non-existent. In the future, it will become more and more necessary for every executive to examine the ratio of freight costs to sales dollar on a regional basis.

The increased cost of distribution has been a dominant factor in the trend toward regional production, but labor is equally important as a driving force. In 1949, gross average hourly earnings of production workers in manufacturing throughout the country were $1.40. The most recent calculations show the present average to be $2.09 per hour. For many manufacturers, the magnitude of increase has been more than an upward adjustment to meet changes in the purchasing power of the dollar. Under the influence of strong unionization and labor shortages, wage rate and labor shortages, wage rate patterns within plants have been altered with unskilled workers receiving disproportionately high earnings. The net result has been disturbing not only in terms of rising payroll costs, but also in a general tendency toward reduction in incentive of individual workers to advance in skills. Much of the touted increase in worker productivity has, in fact, been due to improved machinery and manufacturing techniques rather than closer application of the worker to his job.

Companies recognizing the situation have effectively minimized payroll costs by moving highly repetitive, unskilled or semi-skilled fabrication and assembly out of the main plant to areas where wage pressures are lower. Removal of these simpler operations permits the parent plant to concentrate on those products requiring skilled labor enabling it to act as a pilot operation for new products.

In the decentralization process, it has often been found that most "skills" can be broken down into groups of related "semi-skills." Many highly integrated products can be re-engineered to simplify and reduce specialized labor requirements.

It is a fact, amply demonstrated by the U. S. Department of Labor, that industry is becoming less and less dependent upon the reservoirs of skilled labor normally associated with the old industrial centers. Nothwithstanding the increased complexity of modern manufacturing techniques, the proportion of skilled workers in the national labor force has remained constant at 13-14 per cent since 1920. Conversely, the proportion of semi-skilled workers has been growing rapidly.

Wage rates, of course, will continue to play an important role in determining location, particularly for labor-oriented industries. Regional differentials are well known. The question is often asked, however, will they persist?

A comparison of *identical job occupations* will quickly allay any doubts as to the continuance of these differentials. The Bureau of Labor Statistics reports average union wage scales in

"I personally believe you people did a good job in getting across the many sides connected with industrial development."

Pete Kelley, Director, Nevada Dept. of Industrial Development

"Perhaps the best testimonial that we can offer is that we have placed an order for six additional prints."

J. W. Clark, Commissioner, State of Minnesota Department of Business Development

a gold mine in "GOLD MINE"

"... extremely helpful in discussing with communities what they need to do to improve their situation for future economic development."

Richard M. Kinne, Industrial Director, Missouri Division of Resources and Development

"The acclaim has been excellent . . . in fact, the demand (for the film) is so great that it is difficult to keep it on schedule."

Walter Cates, Exec. V. President, Georgia State Chamber of Commerce

Reproduced on this page are comments from only a few of the many enthusiastic letters we have received from purchasers of GOLD MINE ON MAIN STREET, the first full-color, documentary motion picture produced to aid the industrial developer.

The price of this 25 minute, 16 mm film is low enough for even the most modest budget. Only $250—and there is a provision for your own organization's name at the beginning, also in color, at a small additional cost if you wish. "Gold Mine" is cleared for television, too. Write today for full information on this new and effective tool for dramatizing the great benefits to be gained through industrial development.

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building trades as of July 1, 1957 to be $3.50 hourly in the Middle Atlantic Region as compared to $2.70 in the Southeast, a difference of $.80 an hour in an identical occupation.

In fabricated structural steel establishments, in the spring of 1957, average hourly earnings in the Middle Atlantic Region were $2.19 as compared to $1.81 in New England, $1.75 in the Southwest and $1.64 in the Southeast. At the beginning of 1957, machine cutters in the men's shirt industry received $2.08 in the Middle Atlantic states as compared to $1.48 in the Southeastern states.

There are wage extremes even within regions—labor costs are higher in large cities than in smaller communities. A differential of 12-15 per cent is not unusual.

For many companies, labor—in all its ramifications—will dominate management planning, but rising state and local taxes will assume increasing importance in area selection. Taxes vary greatly, but unfortunately, a cursory examination of tax rates can be most deceptive.

A 5 per cent income tax in one state may actually prove less burdensome than a 4 per cent rate in another since some states permit deduction of federal tax, effectively cutting the published rate in half. Some states have a "franchise" tax based on income and others have an income tax which is really a franchise tax. The single factor of sales within the state determines income tax liability in certain areas.

The tax burden of a hypothetical corporation, a non-ferrous foundry, with sales of $13.5 million was recently examined in nine selected industrial states. Principal corporate taxes, both state and local, unemployment compensation rates, and workmen's compensation taxes were included.

The tax burden in state A, for example, would be $406,000 annually as compared to $175,000 in state I.

Careful calculations are recommended, since tax laws impinge on virtually every business decision, particularly in considerations leading to plant expansion. Hidden corollary effects of high taxation underlie and increase almost every company expenditure. Frequently, too, the tax structure provides a clue to political climate and responsiveness to the needs of business.

We have seen how costs of such major factors as transportation, labor and taxes can be controlled through strategic decentralization—and fortunately, most firms today can take advantage of these economies without seriously impairing their financial position.

During recent years, many states have enacted enabling statutes which, in effect, substantially reduce the required investment of firms in new industrial structures. In some states, municipalities or counties may incur debt and issue negotiable bonds for the acquisition of land or construction of buildings for new industry. Since interest on these bond issues for the investor is tax-free, the cost of borrowing is reduced below that which a company can negotiate for itself.

In many other states, municipalities cannot issue general obligation bonds for this purpose, but they are permitted to erect structures using first lien bonds on the premises, local participation in second liens and even state participation where necessary. In one Eastern state, for example, 100 per cent financing has been widely advertised with the state underwriting a portion of the second mortgage at interest rates as low as 2 per cent.

Of course, the advantages of community participation extend beyond considerations of capital outlay. Where the man on the street is financially interested in the success of the operation, labor relations problems are less frequent. Tax assessments and municipal facility rates are found to be more equitable and excellent community cooperation can be anticipated in street maintenance, water and sewer line construction, etc.

This is precisely what happened to the metal working firm to whom I referred earlier. They fell heir to many unexpected intangible benefits and found that cooperative community attitudes encouraged company growth and fostered cordial management-labor relations.

The union at the home plant now had to face the cold hard fact that the company could achieve maximum productivity elsewhere without high wage rates, burdensome fringe benefits and restrictive work practices. This had an important influence on contract negotiations.

Establishment of another plant closer to customers provided better, quicker service, frequently cutting transit time in half.

Interwoven among the economic factors we are appraising today are certain technological developments that are setting the stage for new patterns of industrial location.

Let us consider the automatic automobile transmission extension housing. This type of casting is supercharged with significance:

(1) It is made of aluminum.

(2) It is the largest single use of aluminum on passenger cars.

(3) Roughly 80 per cent of all 1958 models have automatic transmissions.

(4) The average weight of the complete transmission casting is some 30 pounds.

(5) The transmission housing is made by die casting—the quickest of all the casting processes.

(6) It is made from "hot metal" adjacent to an aluminum reduction plant.

It is this latter factor that stirs the imagination. Ford, at Lister Hill, Alabama and General Motors, at Jones

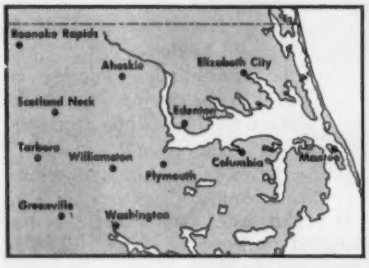
TAXES LEVIED ON A HYPOTHETICAL CORPORATION IN NINE LEADING INDUSTRIAL STATES

STATE	TOTAL—STATE AND LOCAL TAXES	STATE UNEMPLOYMENT COMPENSATION		WORKMEN'S COMP. (FOUNDRIES—NON FERROUS)		TOTAL ALL TAXES
		Tax Rate	Cost	Ins. Rate	Cost	
A	$260,724	$ .90	$31,500	$3.27	$114,450	$406,674
B	191,494	1.50	52,500	3.80	133,000	376,994
C	262,307	1.60	56,000	1.40	49,000	367,307
D	223,350	.80	28,000	1.64	57,400	308,750
E	130,537	1.60	56,000	2.95	103,250	289,787
F	152,563	.90	31,500	1.51	52,850	236,913
G	101,824	.70	24,500	3.07	107,450	233,774
H	100,126	1.00	35,000	1.24	43,400	178,526
I	84,686	.70	24,500	1.90	66,500	175,686

Running The Bounds . . .

of a future site for your new plant

KEYSTONE CORNER OF **NORTH CAROLINA**



North Carolina's great historical romancer, Inglis Fletcher, tells how land records were kept in colonial days. "Each year, the old men showed the boundaries as they remembered them to younger men. They, in turn, showed the lines and marks to youths of sixteen and seventeen . . ." And the ceremony ended in feasting and dancing under the stars.

Today, these same lands, in North Carolina's northeastern corner are among America's choicest industrial locations. For the State is rich in resources. It's among the top four producers of mica, talc, titanium and ten other important minerals. Its forests hold vast reserves of hard and soft wood. Its farms yield abundant agricultural products.

North Carolina has what you need. Manpower? The state home-grows two workers for every one who moves or retires. Transportation? Three major railroads and many truck lines serve this area, which lies close to the great ports of Hampton Roads. Electric power? VEPCO's generating capability of 1,531,900 kilowatts will reach 2,171,900 by 1960!

For confidential site-finding help in this land of mild climate, fine water, friendly people and government . . . contact VEPCO, serving "The Top of the South" in North Carolina, Virginia and West Virginia.

VIRGINIA ELECTRIC and POWER COMPANY

Clark P. Spellman, Director—Area Development, Electric Building, Richmond 9, Virginia • Phone: MIlton 9-1411

Mill, Arkansas are proving that, with the use of hot metal from the pot lines, they could eliminate a casting cost for aluminum ingot, a re-melting cost and various handling and transportation costs.

It, therefore, has become possible to put aluminum into automatic transmissions at a raw material cost somewhat under the ingot price. With similar "hot metal" facilities scheduled by Chevrolet for the New Massena, New York smelter, it is logical to expect a further decentralization of automatic transmission manufacture.

If engine blocks, door frames and other major items should be redesigned to aluminum castings, as now seems likely, a new structure of integrated manufacture may be in the making at primary aluminum smelters.

Even if the latter development does not materialize, related technical changes are remaking the metal working map. Zinc alloy padlocks are representative of what is taking place. As a hardware store item with a one dollar price tag, it is rather typical of the product formerly made in a high cost labor market and now made in the South.

Formerly, the product was fabricated from brass sand castings. The labor content was high. Completely redesigned as a die casting (except for the shackle), it is now a production line item finished and assembled with simple skills. The old brass foundry is shut down.

For all practical purposes, this lock can be made at almost any location in the country. So, too, can numerous other builders' hardware lines, hand power tools and small appliances. New design and new materials make this possible.

My third example—vinyl floor tiles—combine not only new materials, new processes but also imaginative market development. In contrast to linoleum which requires a capital investment of $1.35 for each dollar of annual sales revenue, a plant making vinyl floor covering may be erected for a capital investment of 16 to 18 cents.

Originally introduced as a luxury product, vinyl floor tile has had more success in the low-priced range of floor covering. As a result, the product is remaking the geography of resilient floor covering production.

The list of examples could be extended indefinitely. These three, however, have served my purpose—to illustrate how technical and market factors are generating incentives for further decentralization of manufacture.

But many pitfalls lie in wait for even the most experienced investigator who must develop the mechanics of approaching and solving the over-all locational problem. The multiplicity of factors, the evaluation of contradictory and conflicting data, the final fusing of tangibles and intangibles, demand the most mature business judgment and experience, further complicated by the constant shifting of our dynamic national economy.

I should like to delineate some of the danger areas to be considered:

Calculate all labor costs. Do not neglect to assess the effects of local fringe benefits which can range from $.06 to $.60 hourly. Take into account relative days in work-week, overtime patterns, turnover, absenteeism, productivity, attitudes reflected in man-days lost in strikes, and incentive systems.

Obtain accurate data on utility supply and costs. Engineers of one company using 16,000,000 gallons of water quarterly computed charges of $1,300 prior to location. They were shocked to receive a quarterly bill of over $3,000. They had not been informed of sewer assessment charges. Chemical companies in the southwest, requiring cooling water had to install costly equipment because of unexpectedly high ground water temperatures. In certain areas, insufficient water pressure, as specified by insurance companies, has necessitated construction of expensive sprinkler tanks. Many concerns have been dismayed to learn, *after* they have located, that they could not tap into natural gas lines passing through or near a selected community.

Check final sites carefully. Unforeseen costs in dealing with sub-soil conditions are not unusual. But other problems have plagued executives—too late they have found that utilities must often be extended at company expense, that zoning ordinances restrict the use of their land areas, that access roads are inadequate to handle employee and truck traffic, and that expected cooperation from bus lines in bringing personnel to the plant is not forthcoming.

Don't be blinded by a beautiful existing building. More locational mistakes are made because of the "convenience" or "bargain" of available brick and mortar than any other single factor.

Evaluate industrial parks carefully. Industrial parks with all utilities in place, zoning favorably resolved, together with convenient financing, offer industrialists an intriguing package. This is especially true with warehouses requiring a location on the periphery of a major city, and where few employees are involved.

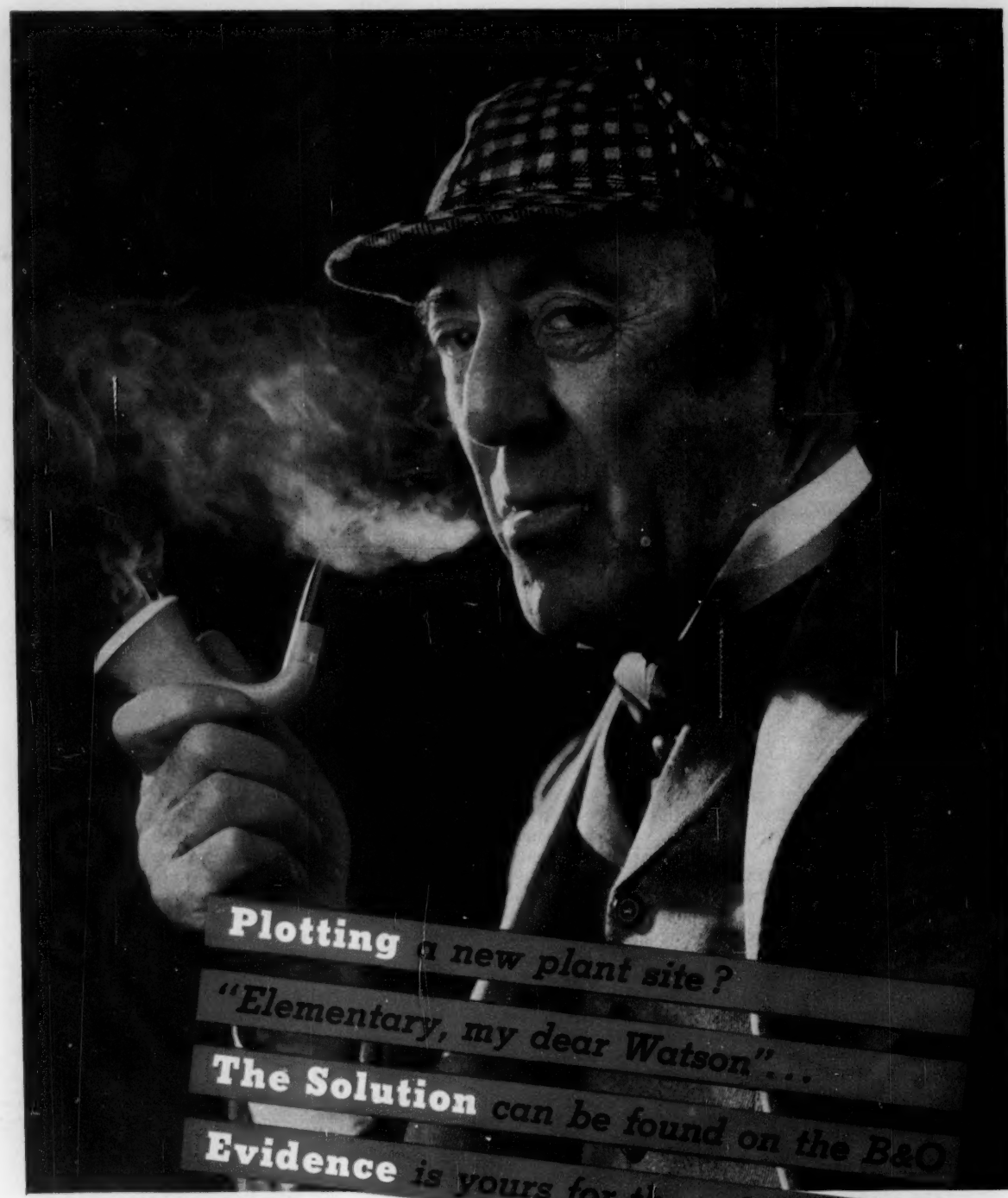
These admitted advantages should be weighed against some of the negative aspects. Vulnerable high labor content industries often find strikes and labor problems to be contagious. It is difficult to establish wage patterns consistent with the needs of individual companies. Frequently at the beginning and end of the work day, there is vehicular congestion at main intersections backing up traffic within the district itself. Developers usually insist upon a high ratio of land coverage, especially in metropolitan areas, thereby limiting future expansion.

Anticipate growth. Failure to predict rapid expansion under a completely new set of operating conditions and costs is a commonplace occurrence. It is recommended that a site at least ten times the original requirements be acquired—not only due to possible company needs but to minimize future encroachment of residential and commercial districts. Be sure that you are not limited by size of water, sewerage, power and gas lines. In order to assure maximum selectivity, insist on a ratio of at least four applicants permanently and locally available for every job required.

Evaluate your distribution. Determine whether your need is for a warehouse or branch plant. Warehouses have been constructed in the past where it was found, too late, that an insufficient freight "spread" was available to warrant the capital outlay involved. The use of a highway in front of a plant by over-the-road trucking firms most assuredly does not guarantee transportation service. Do not assume that favorable commodity rates applying in one area will be available at a nearby location. Check the maximum radius of the free pick-up zone when you are selecting a site in a large city.

Maintain secrecy. Company anonymity helps to minimize labor and other possible repercussions. Confidential investigation makes it possible to weigh objectively the pressing and legitimate claims of all industrial development groups, and finally,

Check community attitudes. The psychological climate of any area exerts a measurable influence on a host of vital intangibles.



Plan with a B&O man!

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BALTIMORE & OHIO RAILROAD

CONSTANTLY *DOING THINGS* —BETTER!

Map Courtesy of Lithographic Arts, Inc.—Artist: Wally Freeland

Fastest-growing county in one of the nation's fastest-growing states, Orange County, California is catching the eyes of site-seeking executives of many blue-chip enterprises. Here's an ID report on an area which offers something special to those who put "atmosphere" high on their list of location factors.

AN AREA SURVEY by Industrial Development and manufacturers record
THE NATIONAL GUIDE TO INDUSTRIAL PLANNING AND EXPANSION

No real estate salesman was ever as convincing a proponent of his area as is GM Executive Robert Dailey who manages the Delco Remy plant here. Dailey asserts that Orange County is one of the finest places in the country to operate a manufacturing plant, and he can prove it!

Ticking off the area's plus factors, Dailey says of the labor situation "I wouldn't trade this gang of mine for any I've worked with in 28 years throughout the country." Absenteeism, for example, is "So low we don't even provide for it in our planning.

And the payoff, Dailey says, is in productivity. "Our plant here tops all of our other battery plants in New Jersey, Indiana and Kansas." Significantly, the local unit is the only major GM plant that is not organized. In the last election, in 1956, the employees voted 70 per cent against the union.

Dailey, a Purdue chemical engineer, came here in 1954. When Delco Remy moved into the new Anaheim plant, "We were able to interview 6500 people for 400 jobs" he says, offering proof of the local labor reservoir.

Today, as President of the Associated Chambers of Commerce of Orange County, Daily heads a group of business leaders who are determined that *(continued on next page)*

trucking warehousing

DAILY—PICK-UP AND DELIVERY SERVICE

PCU AND ICC AUTHORITY THROUGHOUT THE SOUTHLAND AREA WITH THROUGH RATE AGREEMENTS TO ALL POINTS NATION-WIDE VIA LOS ANGELES GATEWAY.

SINCE 1872—DEPENDABLE THROUGH THE YEARS

OUR 86TH ANNIVERSARY

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Owner—*Charles A. Pearson* **Genl. Mgr.**—*Clyde W. Cromer*

the area will continue to grow and prosper. Their objective is spelled out by Industrial Committee chairman Adolf Schoepe: "It is predicted that Orange County will have a population of 2 million in the foreseeable future. To support this population we must have 300,000 industrial jobs."

Schoepe, President of his own electronics firm, Fluidmaster, Inc., is one of many successful Orange County businessmen who are providing alert leadership for future development. Both long-time and newly-arrived executives are making their contribution, for the county already has an impressive industrial base.

Typical of recent expansion is the Santa Ana plant of Standard Pressed Steel, managed by A. A. Leedom. An executive with imagination, Leedom keeps a 4-place Cessna parked at the front entrance, using an airstrip on the site to bring in customers from the Los Angeles area.

The brand-new SPS plant is a model in design and layout—just the type Orange County encourages. And it's already a success, according to Leedom.

The new Santa Ana unit brings together operations previously located in older quarters in the Los Angeles area. When the move was made, 200 out of 208 employees elected to move with the plant to Orange County!

"Expanding markets were the motivation for building our new plant," Leedom explains. "We serve eleven Western states where opportunities are growing—we expect to have to enlarge our plant within a very few years," he says.

This story is repeated in scores of cases in every part of the county. Recent industrial expansion has been phenomenal.

Burroughs Electrodata just bought a choice 165 acre site for electronics development. According to local sources, Burroughs is expected to use about 60 acres and sell the remainder to blue-chip neighbors.

Cannon Electronics is just finishing a 100,000 square foot plant, as is B. J. Electronics, affiliated with Borg Warner and Byron Jackson Pump.

Industrial showplace of the entire area is the Beckman Instruments plant at Newport Beach. Similarly impressive is the plant of Aeronutronics—affiliated with Ford Motor—in the Southern section of the county.

One of Orange County's most effective spokesmen is genial Bob Dailey who manages the General Motors Delco-Remy battery plant at Anaheim. As president of the Associated Chambers of Commerce of Orange County he spearheads an intelligent effort to coordinate the many forces working to advance industrial development in the area.

Mushrooming Population

What's back of Orange County development? Whether it be cause or effect, population growth is easily the most striking trend. Few sections of the country have ever experienced such an important growth so rapidly.

California's population has been growing at a rate more than twice that of the nation. And Orange is California's fastest-growing county.

From a population of 135,940 in 1940, Orange has mushroomed to 226,700 in 1950 and an estimated 600,000 this year. Estimates termed "conservative" by Assistant Planning Director Forest Dickason indicate a million citizens by 1965 and about 1.5 million by 1970.

This explosive population growth manifests itself in all county statistics. For example, Pacific Telephone and Telegraph executive Richard W. Taylor predicts that his firm will have to double its facilities in a little over six years.

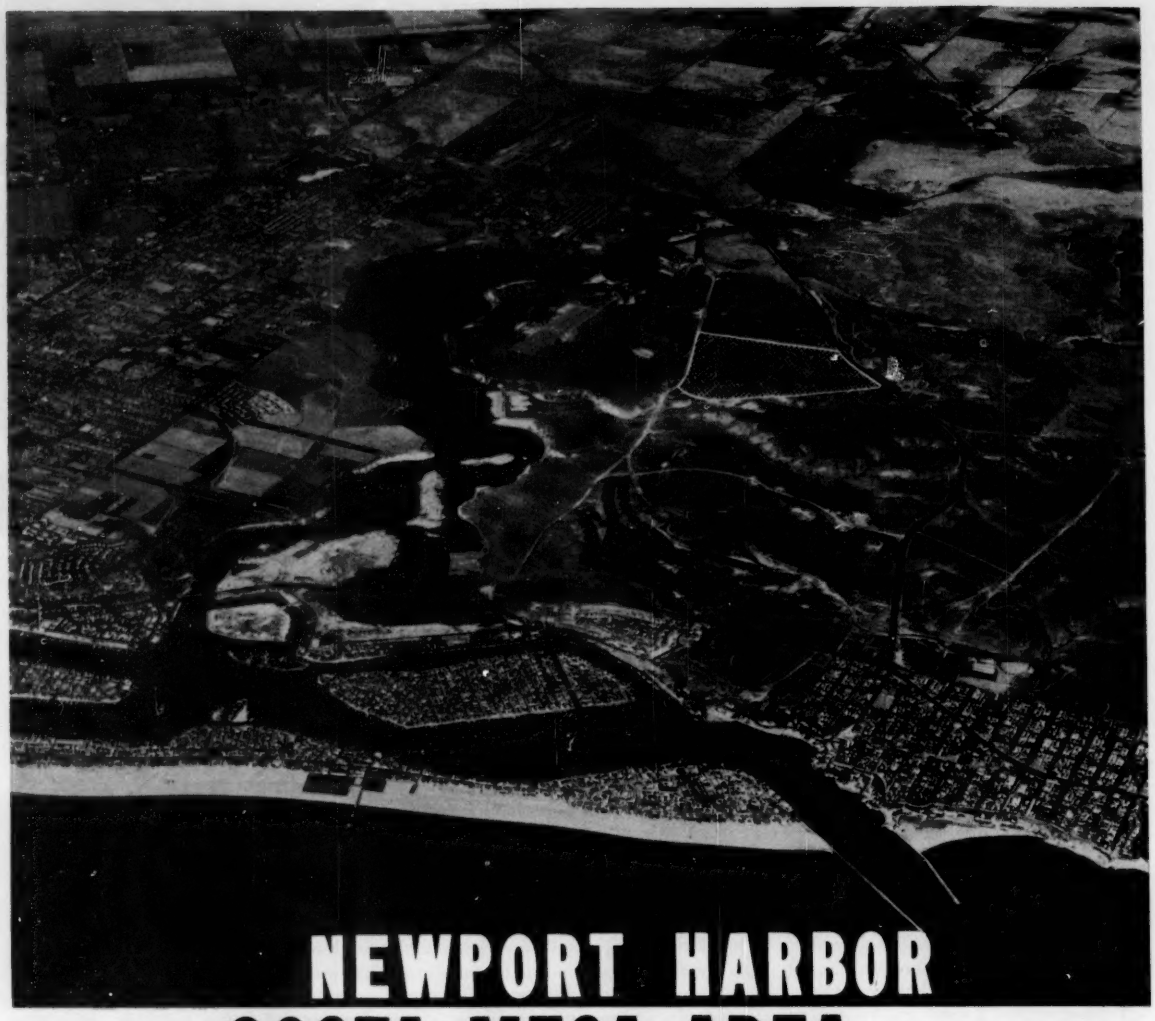
Taylor says the Bell system had less than 20,000 phones in service in Orange County in 1940 and today has nearly 200,000. Others serving the area have had similar experience.

School enrollment in Orange County is another barometer of growth. In 1957, a total of 123,972 children were attending Orange County elementary and high schools, an increase of 19,773 over the 104,199 students enrolled in 1956. Orange County's three junior colleges—Fullerton Junior College, Orange Coast College, and Santa Ana College—also felt this growth trend. A total of 7,758 students registered for the 1957-58 school term, an increase of almost 1,000 more than were registered for the 1956-57 term. The three junior colleges' faculties were expanded by 90 teachers for the 1957-58 term, bringing the total of teachers to 272.

Orange County's young people are afforded ample opportunity for a college education. Located right in Orange County are Chapman College and Southern California Bible College. Chapman, a four year Liberal Arts school, also offers a Bachelor of Music degree, and has a teaching credential program. Southern California Bible School awards the B.A. and the T.H.B. degree. Of course, many Orange County students matriculate at UCLA, USC and Cal Tech., in nearby Los Angeles.

Industrial activity in Orange County indicates an increase which is double that of the population increase rate. In July, 1957, an estimated total of 140,500 persons were employed in Orange County, a boom time increase over the 132,000 persons estimated employed in Orange County during the like month of 1956. But to feel the full impact of this growth phenomenon, you must turn back to July, 1950, when 59,840 was Orange County's total estimated employment.

In 1957, latest available figures, the biggest slice of this pie—an estimated 34,700 workers—was made up of wholesale and retail trade employment. The second largest number of workers,



NEWPORT HARBOR
COSTA MESA AREA

. . . of Orange County, California, is the new home of Aeronutronic Systems, Inc., Subsidiary of Ford Motor Co.

THEY gave as their reasons for selecting this area:

- *Suitability to the requirements of military and commercial projects.*
- *Availability of suppliers and services.*
- *Ability to expand locally to meet any contractual obligation.*
- *Recruitment of outstanding scientific, engineering and technical personnel.*
- *Outstanding year-around climate.*
- *Accessibility to all modes of speedy transportation.*
- *Outstanding community acceptance.*

Other recent arrivals are Hughes Aircraft, Technicraft Laboratories, Inc. of Connecticut, and Voit Rubber.

A recent survey of industries in the area revealed a low absenteeism (1.35%), considerably below the national average. Stable employees resulting in higher efficiency and increased productivity.

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about 29,700, was engaged in manufacturing activities, and here is the growth story most accurately told.

In 1957 there were nearly 6,000 more Orange County employees engaged in manufacturing than there were in 1956. And 22,800 more than was estimated in 1950. Thus, the manufacturing employment of Orange County has grown from estimated figures of 6,600 in 1950, to 23,800 in 1956, to 29,700 in 1957. This rise in manufacturing employment measures more truly than any other yardstick the tremendous recent development of Orange County in terms of new industries.

Although this industrial trend is making the big news in Orange County today, agriculture, forestry and fishing are still a thriving livelihood for many. Latest figures show that approximately 12,200 persons are employed in these fields.

The gross value of Orange County's farmlands was $98,312,100, in 1957. Ten years ago this total was $75,760,575; and twenty years ago, $30,757,248. This healthy rise indicates that industry has not come at the expense of farming; farming has more than held its own, and continues to be a top dollar business in Orange County. It goes without saying that the orange is this county's big money maker, with well over two-thirds of farm acres devoted to it. The famous Valencia orange is by far the top variety.

In spite of setbacks in the construction industry during the summer of 1957, Orange County has topped all other Southern California counties in the ratio of new dwelling units to population. During the period from 1950 to 1957, a total of 103,762 living units was authorized in Orange County. The peak year was 1955, when 25,889 new units were constructed.

Anaheim had the largest number of units—13,168—authorized during the eight year period. More than 10,000 dwelling units were constructed in both Fullerton and Santa Ana during the same time.

A total of $1,373,505,960 worth of building permits was authorized in Orange County during the eight year period. Pacemakers again were Anaheim, Fullerton and Santa Ana; with $190,035,553; $138,768,975 and $137,621,537 respectively.

Vehicle registration, another yardstick for the county on the move, rose from 89,445 in 1947 to 261,594, in 1957. Automobile registrations have more than tripled to 213,968, and truck registrations have grown from 6,735 to 23,572.

Oil Flow Continues

Oil production continues to be an important activity in Orange County. Standard of California, Texaco, Signal-Hancock, Union and Richfield are active in the area. Local developers believe this industry may get a new shot in the arm as a result of off-shore exploration underway.

Another true measurement of Orange County's industrial growth is seen in the bank books. Deposits have grown from $138,088,000 in 1946 to $242,082,000 in 1957; and the growth in volume of debits has jumped from $1,654,626,000 in 1946, to $3,867,283,000 in 1957.

A total of 151.430,000 transactions taxable under the Sales & Use Tax Law was recorded in Orange County during the third quarter of 1957, an increase of 13.5 per cent over the third quarter of 1956. The year 1957's second quarter figure, $143,893,000, was a 17.2 per cent increase over the like period of 1956; and the first quarter of 1957, with 122,123,000 transactions, was 10.4 per cent out ahead of the first quarter of 1956.

Orange County is served by three public utilities. The Southern California Edison Company provides service for most of the county, while the Anaheim Municipal Light Water & Power Company services the city of Anaheim. The San Diego Gas & Electric Company covers San Juan Capistrano, South Laguna, Dana Point, Capistrano Beach and San Clemente. In December, 1957, there were 166,097 gas meters in Orange County, 17,454 more than there were in the like month of 1956.

Orange County is furnished with an imported water supply from the Colorado River by the Metropolitan Water District of Southern California. The voters of the 13 original cities comprising this District approved a $220 million M.W.D. bond issue in 1931 to finance construction, in its initial development, of a huge aqueduct system to transport water from the Colorado River, across deserts and over mountains to this Southern California coastal region. The aqueduct, without any federal government subsidy, was built

Typical of forward-looking executives who have selected Orange County is A. A. Leedom, manager of the new Santa Ana plant of Standard Pressed Steel. Leedom (right) is shown greeting a customer brought to the new plant's front door in the SPS company airplane which uses a private strip alongside the plant. This unique arrangement permits Leedom to bring in customers from throughout the Los Angeles area in a matter of minutes.

and placed into operation during 1941.

Presently, the M.W.D. has a $200 million expansion program in progress. The aqueduct is being completed to full capacity of a billion gallons of water per day, and additional distribution lines and other service facilities are under construction.

Orange County's four military installations are vital factors in the economy of the area. In 1957, yearly totals for the combined bases were acreage, 11,725.37, and expenditures, $63,643,968.97, with a total of 1,784 civilians employed.

The Marine Corps Air Station at El Toro had 1957 total expenditures of $40,008,327; the U. S. Naval Air Station at Los Alamitos, $11,800,665.66. The Marine Corps Air Facility's 1957 expenditures were $5,826,682.31; the Naval Ammunition & Net Depot's, $6,008,294. These expenditures for military and civilian payrolls, as well as for new construction, materials and utilities, give definite indications of the contribution these bases make toward Orange County economy.

Orange County has two publicly owned airports. Orange County Airport, operated by the County of Orange, comprises 280 acres, with 2,800 feet of paved runway, and 175 resident airplanes. Serving central and southern Orange County, it has a CAA approved control tower and a 24-hour fire department service.

The Fullerton Municipal Airport, operated by the City of Fullerton, has 2,700 feet of paved runway and 360 resident planes. Both airports offer field lights, repair services, fuel, and limousine or rent-a-car service. Fullerton Municipal serves northern Orange County and east Los Angeles, and the scheduled airline service at Orange County Airport is Bonanza Airlines.

Sunset Beach Airport, with 1,900 feet of oiled runway, and San Juan Capistrano Airport, with 1,200 feet of runway, are privately owned and operated. Sunset Beach has 60 resident airplanes and San Juan Capistrano has six. Both fields offer repair facilities and fuel.

Orange County has two heliports. Santa Ana-Orange serves Southern Orange County, and Anaheim-Disneyland serves Northern Orange County for mail and passenger service. Santa Ana-Orange is located midway between the two cities; and Anaheim-Disneyland is at Disneyland.

Typical helicopter fare from Los Angeles to Santa Ana is $7. There are 5 trips per day.

Orange County has ten hospitals, six of which have recently completed expansions, or are planning addition facilities. Hoag Memorial, a Presbyterian Hospital at Newport Beach, plans a 109 bed expansion costing $2,209,000 for August, 1959. Santa Ana Community Hospital expects their 60 bed expansion to be completed at a cost of $500,000 in December, 1958. Palm Harbor General Hospital in Garden Grove plans a 46 bed expansion, and Garden Grove Hospital completed a 55 bed, $200,000 addition in January.

Orange County General Hospital, a non-profit institution in Orange, expects to complete their 482 bed addition in 1962, at a cost of $7,260,000. Garden Park General Hospital at Anaheim will complete their 48 bed expansion this month, at a cost of $175,000. Other Orange County Hospitals are Doctor's Hospital in Santa Ana, Anaheim Memorial Hospital, and St. Joseph Hospital, Catholic and non-profit in Orange, and St. Jude Hospital, also Catholic and non-profit, in Fullerton.

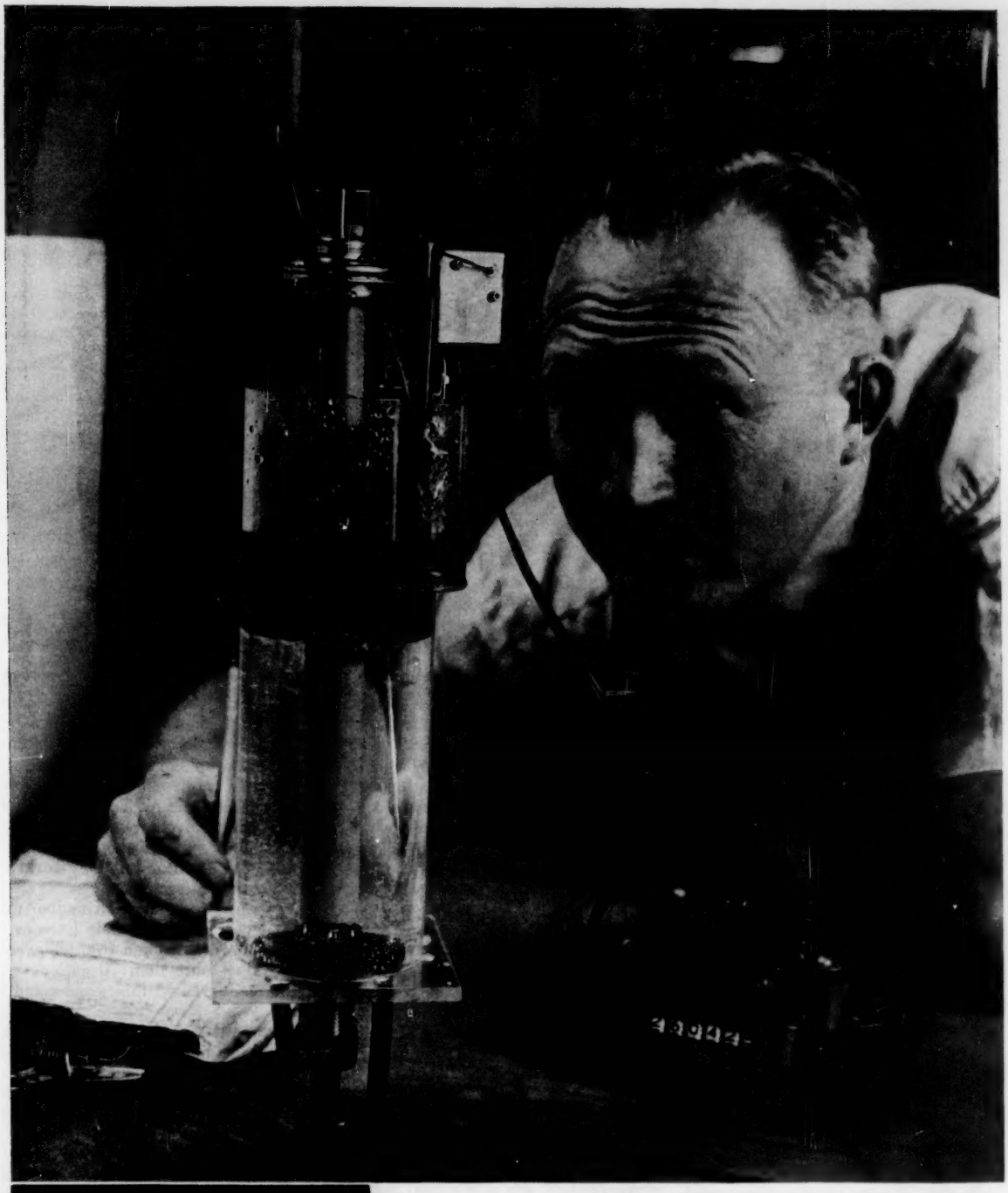
As in any urban area, land prices in Orange County vary greatly according to location. Moreover, the costs here seem to be about average for urban areas in other sections of the country. Raw land with excellent industrial possibilities may range from $6,500 to $15,000 per acre. Level industrial tracts complete with streets and utilities may range from $15,000 to $26,000 an acre.

One broker, commenting on the trend in real estate values, said. "Prices here have been level for the past 6 months—and the asking price on some sites has gone down. We expect only the choice areas to increase in cost in the immediate future."

This chart showing smog concentration in the Los Angeles area was prepared by Stanford Research Institute for Walt Disney to aid in the selection of the site for world-famous Disneyland. It revealed that smog is generally light in Orange County, at lower right on the map.

What Is The Attraction?

Unquestionably the amenities — the things that make Orange County a pleasant place to live—have played a major role in luring people and plants.



PIONEERING MEANS PROGRESS

It has been a rewarding experience for the management of Fluidmaster, Inc., to have been a partner in the pioneering efforts of industrial development in Orange County. Research and development has provided the basic ingredient for growth. New developments and applications of hydraulic controls are the elements for success by Fluidmaster, Inc. Industries new and old are finding Orange County a desirable location for their productive talents.

FLUIDMASTER, INC.

132 East Orangethorpe Way, Anaheim, Calif.

This scene of Southern Orange County reveals a typical panorama. The terrain extends from ocean beaches in the foreground to snow-capped mountains on the horizon. The recreational advantages, including the yachting facilities of Newport-Balboa, are strikingly evident.

The attractions are numerous and varied.

Orange County lies southeast of Los Angeles County in the Pacific Coastal Plain and possesses approximately 40 miles of coast line. There are excellent sand beaches and pleasure boat harbors, ranking it as one of the finest aquatic playgrounds in the west.

The Newport-Balboa Harbor area is famed for its sailing and yachting. Each summer the "Biggest Little Regatta" in the Southland is the Flight of the Snowbirds on Newport Bay.

Orange County's newest recreational area, Newport Dunes, is located in the Newport Beach Upper Bay. Set in a blue lagoon and a half moon of sand, it represents the opportunity for all beach type recreation.

In this 78-acre marine playground is a parking facility for 2,500 cars, 200 rental boat slips, a marine repair shop and service station. For all ages, a serene and scenic walk winding among the dunes, brightened by native flowers and with piped-in music to complete your fascination with this fine recreation area.

A few miles south lies picturesque Laguna Beach. Its world famous Festival of Arts, in which living models "bring to life" famous paintings, together with the Pageant of the Masters provide myriad attractions for all.

One of the most popular attractions in the Southland is Knotts Berry Farm. From a lowly beginning as a berry stand the Knott family has built a fabulous enterprise. Two dining rooms serve 1650 guests at a time. There are more than 40 different shops handling merchandise from all over the world.

The Ghost Town, started by Mr. Knott as a hobby, is now a complete community of the old West, with general store, post office, blacksmith shop, "boot hill," justice of the peace and wagon camp.

Guests touring the Farm can ride the Ghost Town and Calico Railroad, where holdups are a common occurrence, or they can cheer the hero and hiss the villain at the Birdcage Theatre Mellodrama.

Undoubtedly the top attraction in Orange County is Disneyland, claimed by some to be the county's leading industry. Located in Anaheim, it provides entertainment for all ages.

On entering this monument to childhood the world is left behind and the carefree atmosphere of make-believe is paramount.

Main Street, U.S.A., Tomorrowland, Frontierland, Adventureland, Fantasyland, are but a few of the experiences awaiting the visitor of the world's most popular attraction.

Disneyland is a Magic Kingdom to old and young alike. People from every state in America and from all over the world — more than 70 nations — have already visited this wonderland.

Government Services

One of the unusual characteristics of Orange County is that most incoming industries locate in incorporated areas. In several instances firms have had to make arrangements to have sites they selected brought into corporate limits before beginning construction.

The reason sites within city limits are preferred is that services in this area are generally provided through municipal agencies. This is particularly true of water and sewer service. Thus, when you look at Orange County you will be particularly interested in the various thriving municipalities. Here is a quick rundown for your consideration:

Anaheim: Incorporated in 1878,

Anaheim had a population of 14,556 in 1950. A special federal census indicates that the current population is about 78,000.

The city currently encompasses 21.56 square miles, with 2345 acres zoned for industry. Assessed valuation for 1957-58 is $107,833,000 with a tax rate of $1.10.

The latest survey reveals 129 industrial operations in Anaheim. Within the past year and a half the city's industrial expansion has included Hallamore Electronics Corporation; Pacific Scientific Aero Products Inc.; Chrysler Corporation; Western Research Center of Robertshaw-Fulton Controls Corporation; U. S. Borax and Chemical Company; Flexible Tubing Inc., and Interstate Electronics Corporation.

An active industrial development committee of the Chamber of Commerce with complete cooperation of the City Government with local resources of adequate power, water, sewage disposal and a favorable city tax rate has been the key to Anaheim's success.

Brea: Located at the entrance of Brea Canyon, the gateway to the Pomona Valley, Brea is a progressive city of homes and industry. Situated adjacent to major highways and rail lines, it is gaining recognition for its plastic, chemical, tool design and fabrication industries.

From a population of 3,208 in 1950, it has increased to 5,870 in 1958. Covering an area of 3.50 square miles it has an assessed valuation of $9,777,810 with a tax rate of $1.90.

There are a total of 750 acres zoned for industry. Current census figures show a total of 32 industries in Brea. During the past year, Tretolite Chemical Plant located on 26 acres in the industrial park, while the Amercoat Corporation purchased 14 acres in the same area to build a plant for the manufacture of plastic lining for concrete sewer pipes as well as steel tanks.

Buena Park: Incorporated in 1953, Buena Park at that time had a total population of 5,483. Census figures for 1958 show a total population of 26,551.

Comprised of an area of 10.50 square miles, the city has an assessed valuation for 1957-58 of $29,850,420 and a tax rate of $1.45. As of 1958 a total of 550 acres had been zoned for industry.

Among the industries of this city are food processing and food supplements. It is the home of the internationally known Knott's Berry Farm. The city is presently developing areas to be set aside for selected non-smog producing manufacturing and processing firms.

Costa Mesa: With the adoption of the slogan "Clean, Clear, Cool," Costa Mesa has grown from a population of 16,840 in 1953 upon incorporation to a population of 22,631 in 1958.

Comprised of 8.29 square miles, the city has an assessed valuation as of 1958 of $27,183,610 and a tax rate of $1.00.

The area has attracted 140 industries and there is a total of 1,085 acres zoned for industry. Recently located here are Babcock Radio Engineering, Cadillac Gage, Technicraft, Inc., Servonic Instruments Company, Vard Products, Parametrics, together with many smaller firms.

Cypress: Incorporated in 1956 with a population of 1,500, Cypress in 1958 has a population of 1,616. The assessed valuation, 1957-58, is $5,100,870 and the tax rate is $.42.

There are presently 5 industries in the city and a total of 45 acres has been zoned for industry. A well-planned program of industrial development is now underway with selected portions of the city devoted to industry. Proximity to major highways, rail lines and other facilities augment the city's program.

Dairyland: Holding a unique position, Dairyland is devoted entirely to the dairy industry. It was one of the first communities of its kind in the state to incorporate for the purpose of maintaining its industrial integrity. Within its city limits are found many modern dairies supplying milk products to the retail dairy industry of Southern California.

TOP TEN CITIES IN ORANGE COUNTY

(Special Census Data for June 1958)

Anaheim	78,400
Santa Ana	75,000
Garden Grove	62,900
Fullerton	52,000
Buena Park	31,000
Costa Mesa	26,700
Newport Beach	22,800
Orange	21,800
Westminster	18,400
La Habra	17,900

Fountain Valley: This city, recently incorporated, has a population of 597. It is chiefly agricultural. However, long-range plans of city officials and civic leaders envision a model industrial community, based upon available resources of power, water and adequate sewage disposal.

At present there has been no assessed valuation set nor is there a tax rate. In conjunction with city planning, 50 acres have been zoned for industry.

Fullerton: Incorporated in 1904, Fullerton's population in 1950 was 13,958 and 1958 census figures show a total population of 49,272.

As of 1958, the city has a total area of 19.97 square miles. The assessed valuation, 1957-58, is $87,848,870 and the tax rate is $1.66.

Presently there are 99 industries in the city and a total of 1,738.39 acres have been zoned for industry.

Fullerton's industrial growth has been due to the well-planned industrial areas, fine schools and homes and a favorable industrial climate which has been established by a progressive city council and chamber of commerce.

The industrial growth has been steady and systematic. The industries are diversified and range in size from the two and three man plants to those with over 1,000 employees.

Garden Grove: Incorporated in 1956 with a population of 42,000, Garden Grove is one of the largest cities in Orange County, with a 1958 population of 58,380. The city encompasses 13.60 square miles and is principally a community of schools, churches, homes and shops.

The 1957-58 assessed valuation was $57,473,180 and the tax rate $.76. There are 9 industries in the city and 276 acres have been zoned for industry. Although industry at present is limited, future areas of the city are being zoned for progressive light and medium industry.

Huntington Beach: The fast-growing city of Huntington Beach was incorporated in 1909 and in 1950 had a population of 5,237. The present population is 9,986. The city encompasses 18.68 square miles and the Planning Commission has just finished the Master Land Use Plan for 13.99 square miles recently added to the boundaries of the city. An overall zoning plan is presently being completed.

The tax rate for 1957-58 is $1.28 and the assessed valuation $46,561,920.

MANAGEMENT SPEAKS FROM . . .

Southern California's Golden Coast

"THE HEART OF ORANGE COUNTY"

CHAS. Q. COX,
Resident Vice Pres.

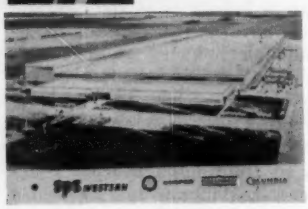
"After over 3 years of operation here - - we know our decision was right!"

ED. B. BUSTER,
Vice-Pres.-Gen. Mgr.

"We believe - - with deep conviction - that Santa Ana is TODAY the most dynamic community in California."

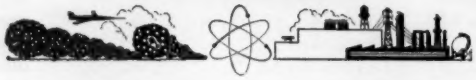
A. A. LEEDOM,
Gen. Mgr.

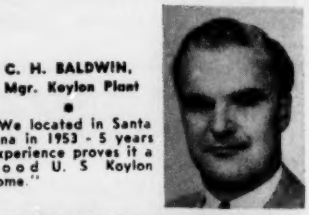
"Convenient for our western customers and working in a climate that Easterners never experience."



"During our 94 years in Orange County, our business has been based on the philosophy of exploring for tomorrow rather than on exploiting for today. By our sponsorship of this page, we invite you to investigate Orange County and to join with us in this philosophy."

The Irvine Company



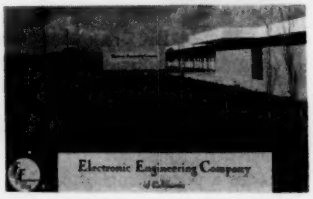


C. H. BALDWIN,
Mgr. Koylon Plant

"We located in Santa Ana in 1953 - 5 years experience proves it a good U. S Koylon home."

BURGESS DEMPSTER,
President

". . . a community where engineers and other professional personnel like to live and work."



GERALD LYNCH,
President

". . . unique advantages as a location for research, development and manufacturing operations."

ElectroData
DIVISION OF BURROUGHS CORPORATION

Santa Ana

Giannini
INSTRUMENTS - CONTROLS

BJ ELECTRONICS
BORG-WARNER CORPORATION

Industrial Development Division

Santa Ana Chamber of Commerce

Kimberly 2-3567 — Santa Ana, California — 802 West Eighth Street

NOVEL B. JAMES
Industrial Co-ordinator

MEMBER: AMERICAN INDUSTRIAL DEVELOPMENT COUNCIL
CALIFORNIA STATE CHAMBER OF COMMERCE PLANT LOCATION COMMITTEE
SOUTHERN CALIFORNIA INDUSTRIAL DEVELOPMENT COMMITTEE

WE HAVE MOBILIZED THE MENTAL ATTITUDE AND THE PHYSICAL AND FINANCIAL RESOURCES OF THIS COMMUNITY AND INTERESTED OUTSIDE SOURCES FOR THE ATTRACTION, RECEPTION AND CULTIVATION OF THE PROUD INDUSTRIES LISTED ABOVE . . . THEY ARE OUR AREA'S GREATEST BOOSTERS . . . WE OFFER THIS SAME SERVICE TO ALL OTHER INDUSTRIES THAT ARE COMPATIBLE TO THESE OPERATIONS.

"Our present industries testify to the area advantages . . . we offer CONFIDENTIAL service to locators."

TREESWEET PRODUCTS CO.
HUGHES PRODUCTS
AUDIO DEVICES, INC.
Rectifier Division

ORANGE COUNTY, CALIFORNIA.....

......"KNOW US BY THE COMPAN(IES) WE KEEP!"

*PROUD INDUSTRIES —

THE MEASURE OF ORANGE COUNTY:

Aeronutronics Systems, Inc.
(a subsidiary of Ford Motor Co.)
Anaconda Wire and Cable Co.
Beckman Instruments, Inc.
Burroughs Corp., ElectroData Division
BJ Electronics Division Borg-Warner
Cannon Electric Co.
Chicksan Co.
Delco-Remy Co.
Dixie Cup Co.
Electronic Engineering Co.
John J. Foster Co.
Hughes Aircraft Co.
Kimberly Clark Corp.
Kraft Foods Co.
National Cach Register Co.
Northrop Aircraft Inc.
Nutrilite Products, Inc.
Ozalid Co.
Rheem Automotive Co.
Robertshaw Fulton Controls Co.
S P S Western (Standard Pressed Steel)
Sylvania Electric Products Inc.
U.S. Electrical Motors Inc.
U.S. Rubber Co.

A few of over 400 new industries locating in Orange County during the past 5 years.

NEW PEOPLE:

Over 2000 newcomers migrate to Orange County EACH MONTH.

INDUSTRIAL SITES:

18000 acres to select from
All utilities
Railroads
Highways
Airports

RECREATION:

40 miles of Pacific coastline
60 minutes from mountain sports
Disneyland

ASSOCIATED CHAMBER OF COMMERCE
of
ORANGE COUNTY

HUNTINGTON BEACH, CALIFORNIA

R. A. Daily, Pres.
(Gen. Mgr. Delco-Remy Co.)

There are presently 20 industries in the city and 2,250 acres are zoned for industry.

The city's newest venture is the $60,000,000 Southern California Edison Company Steam Generating Station which will be completed this year adding approximately $20,000,000 to the assessed valuation of the city.

Annexations of approximately 4.50 square miles now pending will soon give this city an area of approximately 23 square miles, of which a large portion, owned by one company, will be utilized for industrial expansion.

Laguna Beach: Incorporated in 1927, Laguna Beach comprises an area of 2.96 square miles. In 1950 the population was 6,661 and 1958 census figures showed a population of 7,861.

The city has zoned 10.50 acres for industry and there are presently some 25 industries. It is famous as a manufacturing center of ceramics and art works. The assessed valuation, 1957-58, is $21,835,710 with a tax rate of $1.79.

La Habra: Incorporated in 1925, La Habra's growth has more than tripled the population since 1950. That federal census showed 4,961 as contrasted with a 1958 census figure of 14,710.

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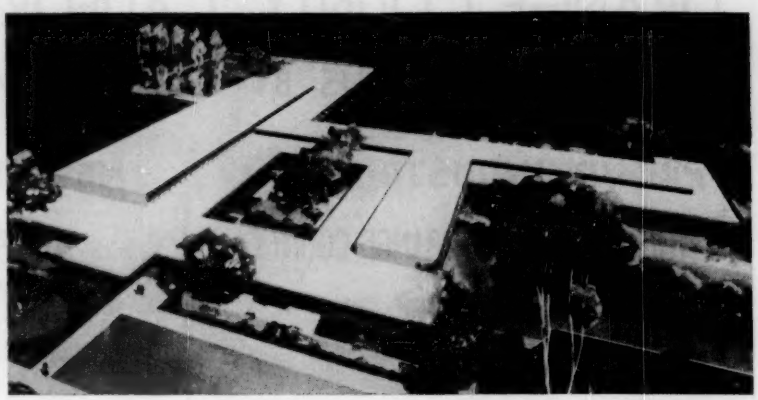

Orange County developers have deliberately gone after the most desirable types of industry. Many of the new units are strikingly-designed plants housing top-level technical activities. This Orange County facility of Electronic Engineering Company won a national architectural award.

A planned city, it encompasses 4.87 square miles. The assessed valuation 1957-58 is $18,937,180 and the tax rate $1.65. There are 742 acres of land zoned for light industry and at present there are 15 industries. Products include foods, electronic instruments, petroleum products and research.

Newport Beach: Incorporated in 1906, Newport Beach in 1950 had a population of 12,120 and in 1958 had climbed to 21,201. With a total of 9.60 square miles Newport Beach has an assessed valuation 1957-58 of $65,507,790 and a tax rate of $1.24.

The city is currently embarked on a program of industrialization and has zoned 71.82 acres for industry and has 12 industries in the city. It is the home of a large fishing, boat building and repair industry and has recently been chosen as an electronics and research center by several concerns including the Helipot Division of Beckman Instruments, Rosan Inc., The Ford Foundation and others.

Orange: Located in the heart of the agricultural belt of Orange County, the city was incorporated in 1888. In 1950 the population was 10,027 and in 1958 had increased to 21,334.

Comprising an area of 7.39 square miles, Orange is engaged in a long-range industrial development program planned to be of benefit to its citizens and industry alike. The present tax rate is $1.40 and the assessed valuation 1957-58, $29,357,540.

The city has zoned a total of 600 acres for industry and presently there are 33 industries in the city. Adequate commercial utilities together with major rail lines and super highways add to the attractiveness of the community to industry.

Placentia: Incorporated in 1926, this city is located in the center of the vast orange producing region of Orange County and contributes to the economy of the surrounding communities through its citrus plants and associations. In 1950 the population was 1,682 and the 1958 federal census shows a rise to 3,042.

Encompassing an area of 1.80 miles, it has an assessed valuation 1957-58 of $3,414,910 and a tax rate of $1.15.

The city has zoned 150 acres for industry and at present there are 6 industries. Adequate rail and highway facilities as well as water and power have greatly increased the city's industrial potential.

During 1957, the L. J. Cannon Manufacturing Company with a new $60,000 building, was the first industry of the non-citrus type to be constructed in the city. Additional rail facilities have been provided the existing industrial area and into adjacent land comprising approximately 141 acres. This area is considered immediate industrial potential by the city although it presently lies outside the city limits.

San Clemente: A community of homes, San Clemente is fast increasing its industrial activity and has grown from a population of 2,008 in 1950 to 7,108 in 1958.

The city encompasses 6.50 square miles and has an assessed valuation of $13,660,350 for the period 1957-58 and a tax rate of $1.86.

Three hundred and fifty acres have been zoned for business and there are

23 industries in the city. Manufacturing concerns include Reeves Rubber Company, Airjet Engineering and Manufacturing, Ceramic Craft, Gregorian Copper, Tilden Tool Manufacturing, Kenfield Products, and Velzy-Jacobs Surfboards.

Santa Ana: Incorporated in 1886 and reorganized in 1888, Santa Ana is the county seat of Orange County. The second largest city in the county, in 1950 Santa Ana had a population of 45,533 while the federal census figures for 1958 show a growth to 69,345.

Covering an area of 15.38 square miles, the assessed valuation 1957-58 is $103,640,400 and the tax rate $1.50.

The city has 1913 acres zoned for business and there are 102 businesses. Santa Ana is now developing a planned industrial district to serve expanding manufacturers. Adjacent to rail, air and highway transportation, the city is host to many of the leaders in the electronics, rubber and fabricating industries as well as the home of western operations for two nationwide insurance companies.

Major industrial and commercial growth through 1956 and 1957 included State Farm Insurance Companies, Southern California Offices; BJ Electronics Division, Borg Warner Corporation; Giannini Research Laboratories; U. S. Polymeric Chemicals, Inc.; Engineered Electronic Company; Allstate Insurance Company, regional offices; Cannon Electric Company; Audio Devices, Inc. and Flexonics Corporation.

Recently purchasing property and starting developments has been Revere Copper and Brass, Inc., and W. J. Voit Rubber Corporation, while U. S. Rubber Koylon Plant was expanded approximately 100,000 square feet.

Seal Beach: Incorporated in 1915, in 1950 Seal Beach's population was 3,553 and in 1958 the City Administrators office estimated the population to be 4,200. The city covers an area of 1.25 square miles. The assessed valuation for 1957-58 was $17,113,380 and the tax rate $1.50. A total of 292 acres have been zoned for industry by the city and there are presently 4 industries.

Stanton: Incorporated in 1956 with a population of 1,500, the 1958 federal census shows a population growth to 4,551. Covering an area of 2.20 square miles, there are 279 acres zoned for industry. The assessed valuation 1957-58 was $1,128,190 and the tax rate has not been established. There are currently 23 existing industries.

Tustin: Incorporated in 1927, Tustin had a population of 1,145 in 1950 and 1,730 in 1958. The city has zoned 47 acres for business and has 17 industries. Assessed valuation for 1957-58 is $2,346,300 and the tax rate $1.00.

Westminster: Incorporated in 1957 with a population of 10,755 by 1958 the city had a population of 16,020. Covering an area of 6.0 square miles, the city has zoned 420 acres for industry. The assessed valuation is included in the County totals and no tax rate has been established as yet.

Westminster is vitally interested in promoting industrial development in keeping with community standards and presently has 16 industries. Present planning, when placed in effect, should produce effective results.

Orange County I.D. Team

The various development interests in Orange County are just now in the process of organizing a cohesive county-wide organization. The key group in bringing this about is Associated Chambers of Commerce headed by Robert Daily. As yet this group does not have an executive staff.

Of course many of the Chambers of Commerce represented in the council have executive secretaries. Several have employed professional developers on a full-time basis. An example is Novel B. James, industrial coordinator of the Santa Ana Chamber.

There is considerable discussion now as to what role the county government should play in industrial development. The chairman of the County Board of Supervisors, Willis H. Warner, indicates that serious thought is being given to the development function.

Another active group includes realtors and brokers engaged in developing Orange County property. Typical of small enterprising units is the firm of Stafford and Ledford which recently incorporated as Orange County Industrial Developers, Inc. to specialize in plant location work.

Members of the industrial committee of the Associated Chambers of Commerce of Orange County include President Robert Daily, general manager, Delco-Remy Company, Anaheim; David Aaron, owner, Barton Chevrolet Company, Yorba Linda; Urban Beh, Newport Beach; Ed Buster, general manager, Townsend Company, Santa Ana; Grant Canfield, manager, Merchants & Manufacturers, Garden

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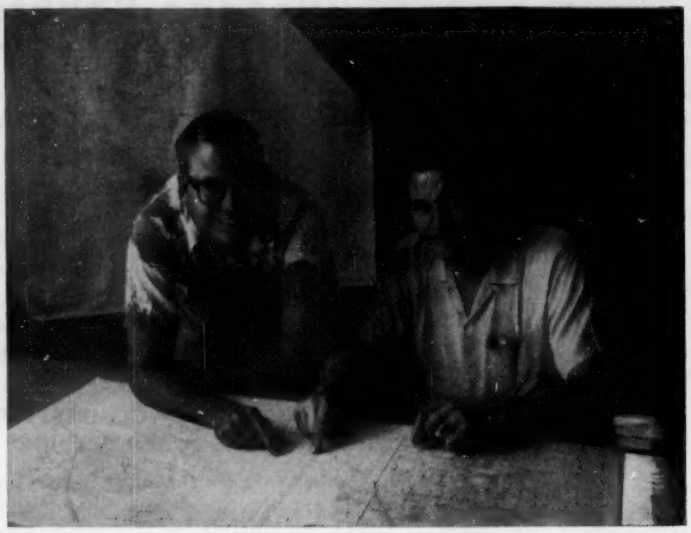


A number of small but aggressive development firms are now active in establishing industrial activities in Orange County. Principals of one such firm, Orange County Industrial Developers, Inc., include (left) Hal Ledford and (right) Jess Stafford. Stafford, incidentally, is a fighter who once met Dempsey.

Getting Ready For Tomorrow

While the growth of Orange County in the past decade has been truly phenomenal, alert community leaders are convinced that the biggest development is still in the future. Thus, much attention is being given today to organizing community leadership to guide future growth. The most representative countywide group is the Associated Chambers of Commerce of Orange County headed by Robert Dailey. The county government is also devoting much study and there is a healthy realization that new and more complete planning and zoning programs must be devised. All of these undertakings mean that the site-seeking executive will in the future find better assistance in selecting a site in the county.

Orange County's government is also getting into the industrial development act. County Commission Chairman Willis H. Warner reports that a study is now underway to determine what the role of the local government should be.

A number of the cities and communities in Orange County are now setting up full-time professional industrial development operations. A leader among these is Santa Ana, represented by industrial coordinator Novel B. James (left above) shown describing a site to an interested executive.

Grove; Robert Chambers, partner, Boss Coverall & Linen Supply Company, Anaheim; Howard Crooke, manager, Orange County Water District, Santa Ana;

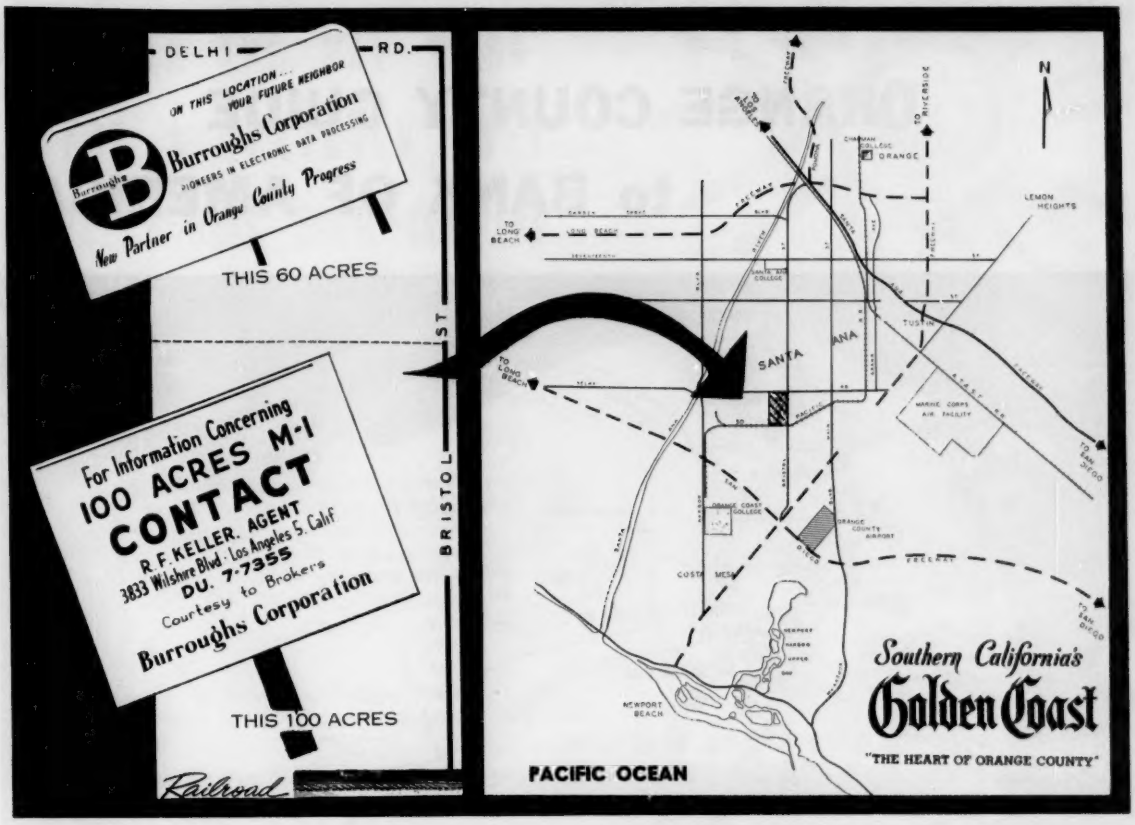
Burgess Dempster, president, Electronic Engineering Company, Santa Ana; Don Duncan, general manager, Beckman Helipot, Newport Beach; Wendell Faulk, general manager, Mansfield Tire & Rubber Company, Capistrano Beach; R. L. Bigney, controller, Byron-Jackson Division, Santa Ana; Hollis Hardy, general manager, Great Western Cordage, Orange; Tom Howe, plant manager, Kimberly Clark Corporation, Fullerton; James Kanno, Mayor, Fountain Valley;

Walter Knott, owner, Knott's Berry Farm, Buena Park; Louis Lake, owner, Garden Grove Lumber Company, Garden Grove; Lee Launer, executive vice president, Fletcher Aircraft, Fullerton; Joe Long, district manager, Southern California Edison Company, Santa Ana; Arthur J. Lucey, director of community relations, Alpha Beta Food Markets, Inc., La Habra; R. M. McIntyre, sales manager, Southern Counties Gas Company, Santa Ana; E. P. McRitchie, assistant vice president, Bank of America, Santa Ana; Edward C. Mitchell, owner, Metchell's Market, Tustin; James O'Keefe, vice president, Security Title Insurance Company, Santa Ana;

Charles Pearson, president, Anaheim Truck & Transfer Company, Anaheim; Everett Reese, rancher, Brea; J. Herbert Risheberger, Sana Point; Harry Ross, owner, Ross Motel, Seal Beach; George Schoener, manager, Ozalid Division — General Analine, La Habra;

Adolf Schoepe, president Fluidmaster, Anaheim; Harmon Scoville, attorney, Westminster; Ed Stang, manager, Southern California Water Company, Huntington Beach; Jack W. Stricker, legal consul, Hughes Aircraft Corporation, Fullerton; Don Struck, sales manager, Inland Transportation Company, Orange; Dick Taylor, division commercial manager, Pacific Tel. & Tel. Company, Orange; and Paul Winget, district freight agent, Sante Fe Railroad, Santa Ana.

Many of the facts for the foregoing report were found in "Orange County Progress Report" by R. I. Morris, March, 1958. Copies are available for $1.04 from the County Board of Supervisors, Court House, Santa Ana, California.



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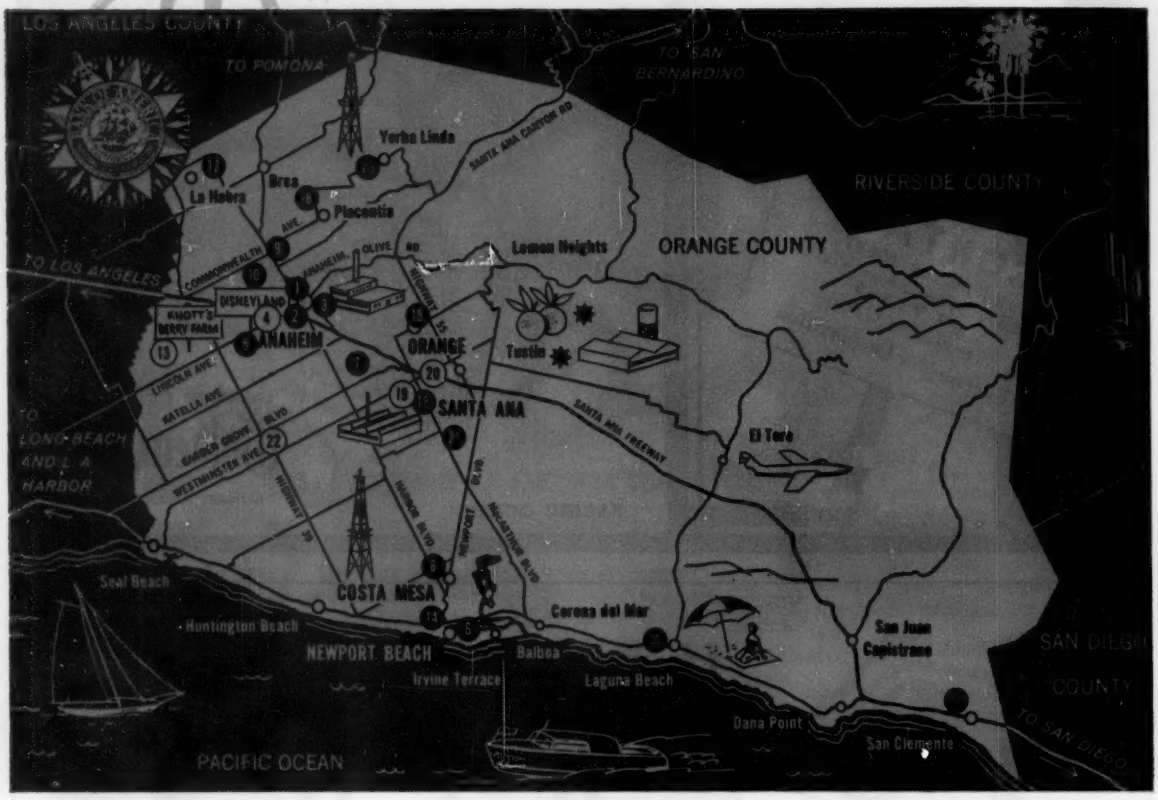

1. Anaheim Branch
2. West Anaheim Branch
3. East Anaheim Branch
4. Ball Road-Magnolia Ave. Branch (Anaheim)
5. Disneyland Branch
6. Balboa Branch
7. Chapman-Brookhurst Branch (Garden Grove)
8. Costa Mesa Branch
9. Fullerton Branch
10. West Fullerton Branch
11. Laguna Beach Branch
12. La Habra Branch
13. Lincoln-Knott Branch (Buena Park)
14. Newport Beach Branch
15. Orange Branch
16. Placentia Branch
17. San Clemente Branch
18. Santa Ana Branch
19. 17th & Bristol Branch (Santa Ana)
20. 17th & Tustin Branch (Santa Ana)
21. South Santa Ana Branch
22. Westminster Branch
23. Yorba Linda Branch

● Existing branches
○ Branches opening in 1958
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THE NATIONAL MAGAZINE OF PLANT LOCATION NEWS

XPANSION BRIEFS

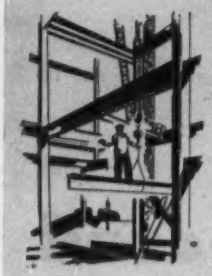
ACTON, ONTARIO. Completed ahead of schedule, the new plant here of H. K. Porter Company (Canada) Limited is now in full operation. The new facility, with 80,000 square feet of space on a 60-acre site, is the permanent headquarters for the Disston Division, Canada, located previously at Toronto, and for the new Refractories Division.

BRUNSWICK, GA. Ground has just been broken here for Bestwall Gypsum Company's first Eastern Seaboard plant. To cost $7.5 million, the new facility will employ 250 persons and have an annual production capacity of 300 million square feet of gypsum board annually. Completion is expected late in 1959.

GREENSBORO, N. C. H. W. Lay & Company of Atlanta will build here a new manufacturing and distribution plant to serve the Carolinas and Virginia. On a three-acre site, the plant will cost $400,000 and employ 70 persons. Completion is scheduled for April, 1959. Lay produces potato chips and other snack foods.

RICHMOND. In one of the biggest moves of its kind ever undertaken in the South, the Seaboard Airline Railroad has shifted its general offices in Norfolk and Portsmouth to a new $6 million headquarters building in Richmond. The structure has 315,000 square feet of floor space. Approximately 700 employees and their families were involved in the move.

NORFOLK. A bulk terminal for Tidewater Oil Company will be established in South Norfolk. The terminal, a 100,000-barrel facility, will be on a 60-acre tract fronting on the southern branch of the Elizabeth River. Company spokesmen estimate initial construction costs at $500,000.



NEW PLANT SUMMARY

BY JOSIE QUILTY

The following is a summary of major industrial plants reported to INDUSTRIAL DEVELOPMENT during the month of July, 1958, by industries and industrial development organizations in the United States, Canada, and territories.

Number of employees is indicated by the code: A (under 25); B (25-100); C (100-250); D (250-1,000); and E (Over 1,000).

ALABAMA

Florence—Bob Blanke Sales Co., Helton St., Bob Blanke, Pres., frozen foods. Oper. began Aug., 1958.

ALASKA

No plants reported.

ARIZONA

Phoenix—General Electric Co., computer dept. Oper. est. to begin Dec., 1958. 104,000 sq. ft. $1 million.

Tempe — Yuba Consolidated Industries, Inc., John L. McGara, Pres., steel mill. Oper. est. to begin early 1959. $2.5 million. (D)

ARKANSAS

El Dorado—Cameron Feed Mills, G. Ted Cameron, Pres., poultry and livestock feed mill planned. Home office: N. Little Rock. $300,000.

Fayetteville—Campbell Soup Co., Henry B. Shreve, Off., packaged poultry. $1 million. (C)

Stephens — Berry Asphalt Co., lubricants. In oper.

CALIFORNIA

Antioch—Plasticsmith, Inc., Antioch-Pittsburg Hwy., R. G. Smith, Pres.; household plastic gloves. Oper. began July, 1958. (B)

Brandon—Perry Brothers, Voyle C. Perry, Co-owner, wood products, fruit and vegetable boxes. Oper. began Aug., 1958.

Burbank—General Controls Co., Aviation and Electronics Div., Flower St., Jack Ray, Vice Pres.; aircraft and missiles automation products. Const. began July, 1958. $5.6 million.

Burlingame — Rockbestos Products Corp., Millsdale Ind. Dist.; insulated wire and cable for aircraft, regional office and warehouse. Subs. of Consolidated Copper Mines. Oper. began Aug., 1958.

Burlingame—Tayler Products Corp., Millsdale Ind. Dist., metal floor decking and grating. Oper. est. to begin Fall, 1958. 22,500 sq. ft. $250,000.

Compton—American Plastic Pipe Co. Div., Carton Products Corp., Levinson Ind. Tract; plastic pipe. In oper.

Compton — Gabriel Co., Bohannan Mfg. Div., Olive St., force-ejection systems for missile and aircraft industry. Has acquired 13 acre site for mfg. plant. Home office: Cleveland.

Concord—Systron Corp., 950 Galindo St., George Burns, Jr., Pres. Under const. on 13 acre site. $500,000.

Fresno—California Industrial Rubber Co., 2009 Van Ness, Maynard A. Segale, Pres.; industrial and commercial rubber supplies, dist. plant. Oper. began Aug., 1958. 7,200 sq. ft.

Fresno—Stepaco, Inc., 1939 S. Van Ness, Paul F. Chaput, Supt.; hair lotions, shampoos, toilet water, after shave lotion. Subs. of Stephan Distributing Co. Oper. began Aug., 1958. 7,500 sq. ft.

Lathrop—California Ammonia Co., Lowell W. Berry, Bd. Chmn., ammonia and liquid ammonia storage facilities. Under const. $5 million. (B)

Los Angeles—American Potash & Chemical Corp., 3000 W. Sixth St., new hdqrs. bldg. In oper.

Monrovia — Consolidated Electrodynamics Corp., Systems and Transducer Divs., Kenneth W. Patrick, Vice Pres.; complex electronic instruments, office, lab, plant. Moved from Pasadena. In oper. Two 57,500 sq. ft. bldgs. $1.5 million. (D)

Oakland—McGuire Chemical Co., terminal. $500,000.

Pittsburg—Linde Co., liquid oxygen-nitrogen for missile industry. Oper. est. to begin summer, 1959.

Redondo Beach — Pacific Semiconductors, Inc., Dr. Harper Q. North, Pres., administration, engineering, production center for mfg. of semiconductor devices. Subs. of Ramo-Wooldridge Corp. Oper. est. to begin 1960. $10 million.

Richmond — Standard Oil of California, catalytic cracker and expansion of existing facilities. Under const. $33 million.

San Bernardino—Simon Levi Co., Mill & G Sts., Harold S. Jacobs, Pres.; liquor distribution. Hdqrs: Los Angeles. Oper. est. Oct., 1958. 23,000 sq. ft.

San Diego — Convair Astronautics, J. V. Naish, Pres.; Atlas intercontinental ballistic missile, administrative, engineering, research, development and production facilities. In oper. $40 million. (E)

San Francisco—Bay Carbon Co., 1385 Fitzgerald Ave., carbon. Div. of Valley Carbon Co. In oper.

San Francisco—Wire and Textile Machinery, Inc., 230 Shaw Rd., textile machinery distribution. 17,000 sq. ft.

Seeley—Imperial Paving and Rock Products Co., U. S. Hwy. 80, Charles Newmann, Supt.; black top road surfaces. Oper. began Aug., 1958.

South Gate—Catalina, Inc., 11101 Palmer Ave., swim suit factory planned.

Visalia—Bayly Mfg. Co., work garments. Home office: Denver. 36,000 sq. ft. (C)

Visalia — Sprague Electric Co., electronic components. Hdqrs: North Adams, Mass. In oper. 20,000 sq. ft. (C)

Wilmington—Richfield Oil Corp., benzene-toulene. Oper. began summer, 1958. $6.5 million.

Tanglewood—Magna Electronics, Inc., F. Roy Chilton, Pres., guitars, amplifiers, organ sound systems, high fidelity equip. Oper. est. early, 1959. $750,000. Also plans additional 50,000 sq. ft. on 7.5 acre site purchased in San Fernando Valley.

COLORADO

Denver — Bradford Laboratories, oil field water consulting firm, new regional lab. In oper.

Drake — Beryllium Corp., beryl ore mill planned.

Loveland—Mineral Concentrates & Chemical Co., Inc., L. Bernard Davis., Pres., beryllium hydroxide. Oper. began Aug., 1958. $250,000.

Masonville — American Beryl Corp., beryl ore mill. In oper.

CONNECTICUT

New Haven—Sargent & Co., Forbes Sargent, Pres.; hardware and tool firm. Relocation planned in city. 400,000 sq. ft. $4 million. (E)

Windsor—Accessory Controls And Equipment Co., Bloomfield Ave.; test equip. for aircraft, automotive, ordnance, atomic energy, guided missile and Diesel engine industries. Oper. est. to begin Fall, 1958. 13,000 sq. ft. (B)

DELAWARE

Lewes — Vessels Lumber Co., W. Allen Vessels, Pres., Osmose system of timber treating. Oper. began Aug., 1958.

Milford—I. C. Isaacs & Co., Julian Adler, Off., warehousing finished apparel. Oper. began Aug., 1958. (B)

Milford — Sinclair Oil Co., tank farm planned. Home office: New York. Has purchased acreage for $400,000. (B)

Wilmington—Delaware Power & Light Co., H. H. Plank, Off., power plant. Oper. est. to begin Nov., 1958. (B)

DISTRICT OF COLUMBIA

No plants reported.

FLORIDA

Baldwin—Westinghouse Electric Corp., W. S. Risser, Off., electrical appliance mfg. and repair shop. Home office: Pittsburgh. Oper. est. mid-1959. 18,000 sq. ft. $750,000. (B)

Gainesville — Condor Metal Co., Herman Voss, Mgr., machine parts, tools, dies. Oper. est. to begin 1958. (B)

Hialeah—Florida Foam Products, Inc., Div. Foam Rubber Products, 1085 E. 24th St., George W. Brantman, Pres.; foam rubber decorator pillows. (C)

Lakeland—Superior Frozen Food Products, processed and frozen eggs. Oper. est. to begin Sept., 1958. (B)

Murdock—Maule Industries, Jose A. Ferre, Off., concrete, concrete block. Oper. began Aug., 1958. (B)

Ocoee — Curtis Mfg. Co., Adrian Shore, Off., military shirts. (B)

Okaloosa County — Westinghouse Electric Corp., Elgin Air Force Base, electronic engineering. In oper. (B)

Orlando—Air Control Products, Inc., Mort Schenck, Mgr., jalousies, aluminum awnings, windows, doors. Branch of Miami plant. Oper. est. to begin 1958. (B)

Orlando—Avionics Research Corp., Vincent P. Daly, Off., engineering. Oper. est. to begin Oct., 1958. (B)

Orlando—Systems, Inc., Ben Moss, Mgr., electronic research and development.

Pensacola — Dixie Jalousies, E. R. McGregor, Mgr., aluminum jalousies. Oper. began July, 1958. (B)

Plant City — Tampa Electric Co., power plant. In oper. $300,000.

Port St. Joe — Michigan Chemical Co., Theodore Marvin, Pres., high-purity chemical and refractory grades of magnesium oxide. Home office: St. Louis, Mich. Const. began Aug., 1958. $5 million. (B)

St. Petersburg — Electronics Communications, Inc., Frank W. Godsey, Jr., Pres.; classified military equip., new plant adjacent to existing facilities. Oper. est. to begin Spring, 1959. 150,000 sq. ft. $2 million. (D)

Stuart—General Tool and Gage Co., A. J. Cosmetto, Owner, precision instruments. Moving from Westchester, N. Y.

Tarpon Springs — Pinellas Seafood Co., Anclote Rd., shrimp processing. Oper. began Aug., 1958. (C)

GEORGIA

Atlanta—Lovable Brassiere Co., 2398 Piedmont Rd., N. E., Dan Garson, Vice Pres.; brassieres, consolidation of operations. Oper. est. to begin Fall, 1959. 115,000 sq. ft. $1.75 million. (E)

Atlanta—Radio Corp. of America, Electron Tube Div., 3405 Empire Blvd., S. W., W. R. Aiken, Mgr.; regional distribution facility for electronic tubes and semi-conductor products. Oper. began July, 1958. 25,000 sq. ft.

Atlanta—Robett Mfg. Co., apparel. Oper. began July, 1958. (B)

Atlanta—John Rogers Co., overhauling of auto engines.

Atlanta—Shamrock Knitting Mills, apparel. (B)

Brunswick — Brunswick Steel Products, 2514 Newcastle St., Bill Hail, Co-owner; steel fabrication, structural steel. In oper.

Chamblee — General Electric Co., switchgears. 40,000 sq. ft. (B)

Chamblee — Marbleseal Co., waterproof paint. Oper. began July, 1958.

Cuthbert — Dulaney Plywood Corp., Ed Dulaney, Pres., woodwork plant, plywood doors. Oper. began July, 1958. (B)

Cuthbert — J. & J. Veneer Co., plywood panels for doors. Branch plant. Oper. began July, 1958. 15,000 sq. ft. $200,000. (D)

Jasper — Inland Mfg. Co., apparel plant. (B)

Marietta—Brooks Machinery Co. has selected site for plant to distribute and service heavy earth moving equip.

Meda—Meda Maid Footwear Co., Daniel R. Wax, Pres., footwear factory. Oper. est. to begin Sept., 1958. (C)

Mt. Airy—Bowater-Southern Corp., pulpwood chips. Oper. began July, 1958. (B)

Savannah — National Resin Oil Co., tile cement. (B)

Savannah—Savannah Electric & Power Co., generating plant. Under const. $10 million.

Stone Mountain—Union Bag-Camp Paper Corp., paper products.

Tallapoosa—Associated Rubber Co., rubber products.

Vidalia—Pennington Grain & Feed, Inc., Brooks Pennington, Pres., wholesale seed concern. Home office: Madison, Ga. Has acquired 12 acre site for 103,000 sq. ft. warehouse.

West Point—Melvin Rechtman Industries, sewing plant. Oper. began July, 1958. (B)

HAWAII

No plants reported.

1,419 NEW PLANTS

Since we began publishing the expanded New Plant Summary in June, 1,419 new plants have been reported by ID. During the four months, 1,287 of these new units have been recorded for the United States, 97 for Canada, and 20 for Puerto Rico. The 15 remaining new plants were reported from other countries.

Our sincere thanks go to the many helpful members of the State Development Commissions, whose co-operation has been invaluable to us in compiling these reports.

IDAHO

Boise — Biltmore Trailer Distributing Co. of Norwalk, Calif., Howard E. Kohler, Pres., assembling of trailers. Site selected. (B)

Boise—Tops Mfg. Co., John Rock, Business Mgr., cleaning solvents from Idaho minerals. In oper.

Lapwai—Sunbeam White Sands, Inc., Silica sands plant planned. Home office: Moscow, Idaho. $300,000.

ILLINOIS

Chicago—Air Products, Inc., high purity oxygen plant under const. on Calumet River.

Chicago—Armour & Co., 401 N. Wabash Ave., new general offices. In oper.

Chicago — Armour Research Foundation, Illinois Institute of Technology, expanded chemical research facility planned. 125,000 sq. ft. $Multi-million.

Chicago—Hodag Chemical Corp., antifoams, esters, emulsifiers, flooculating agents, other surface-active chemicals, silicon products, new plant, office, lab. Under const.

Lyons—R. D. Buell, Inc., 47th St. and Lawndale, auto and seacraft horns. Under const.

Moline — Herman Nelson Div., American Air Filter Co., Inc., 25th St., Howard M. Fitch, Vice Pres.; fabrication and assembly of classroom unit ventilators, school air conditioning equip. Oper. est. to begin Summer, 1959. 76,800 sq. ft. $750,000.

Mount Zion—Pittsburgh Plate Glass Co., R. E. Barker, Vice Pres., window glass. Oper. est. to begin late, 1958. $Multi-million.

Mundelein—Austin Co., metal fabricating plant planned. Home office: Cleveland. 100,000 sq. ft. (D)

Peoria—United Grain Co., grain terminal under const. on Illinois River.

Rockford—Solem Machine Co., Alpine Rd., Peter Solem, Pres.; woodworking machinery. Oper. est. to begin Oct., 1958. $500,000.

INDIANA

Bedford—C-C Propane Fuel Corp., North M St., John J. Coleman, Owner; gas bottling plant. Home office: Bloomington. Oper. est. to begin Sept., 1958.

Brazil—Hill Food Products Co., pet foods. In oper. $150,000. (B)

Centerville — Unidentified firm, caskets. $100,000. (B)

East Chicago—Inland Steel Co., sintering plant. $13.5 million.

Elkhart — Miles Laboratories, citric acid. Const. est. to begin Fall, 1958. $4.5 million.

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Naturally, we're always glad to make new friends and open up new accounts but, more and more as time goes on, the greater part of our business comes from concerns that have dealt with us before—some of them for nearly half a century.

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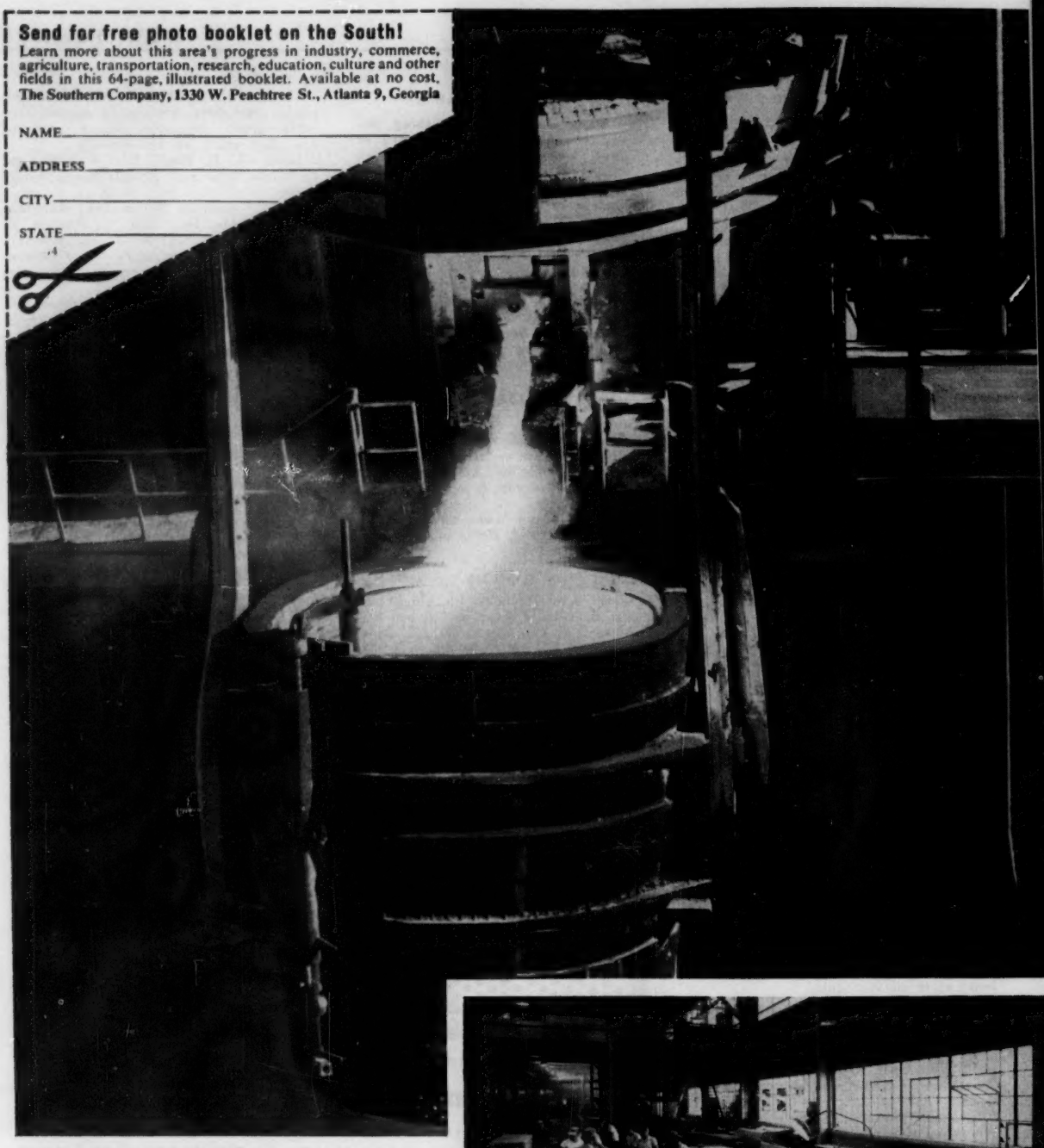


AMONG THE NATION'S LARGEST is this electric furnace at Republic Steel Corporation's 300-acre mill site at Gadsden, Alabama, where 5,000 are employed. Two of these furnaces were installed as part of a recent two-year, $55 million expansion program, increasing the plant's steel-making capacity by 50%. Most versatile of Republic's eight mills, the Gadsden operation offers a diversity of products for hundreds of steel-using industries in the South.

MISSISSIPPI FORESTS provide raw material for these building insulation boards made at Flintkote Company's Meridian, Mississippi, plant. Producing a variety of insulation material, the plant spends around $3-1/2 million annually for payrolls and wood alone. Plant operation has reached three-shift capacity.

The Last Half of the Twentieth Century Belongs to the South!

THE SPIRAL OF PROGRESS that began in the forties continues in the South! Since 1950, the economic developments taking place within Dixie's four-state "growth core"— Alabama, Georgia, Florida and Mississippi — have outdistanced the progress of the nation!

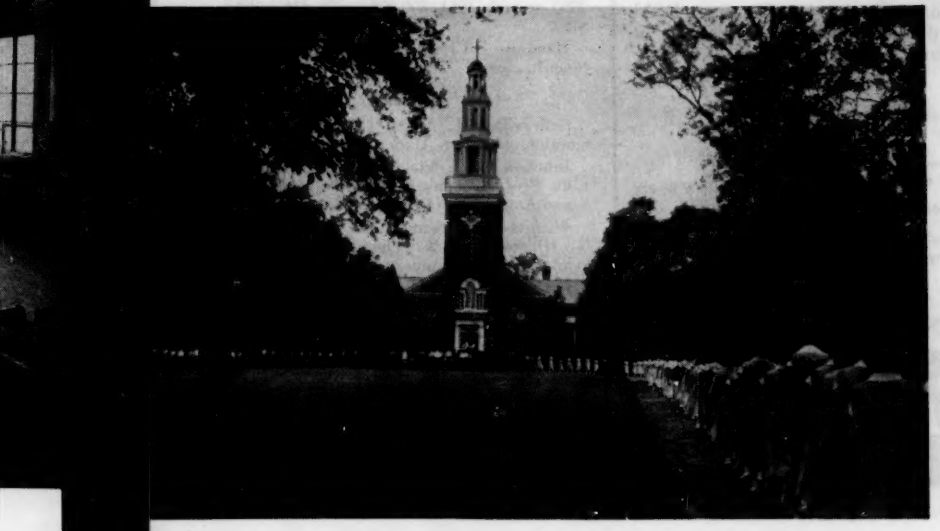
Such flourishing fields as industry, agriculture, transportation, research, education and others, continue to complement one another . . . fashioning an economic structure that strengthens daily and brings this dynamic region ever nearer to the full realization of its vast potentials.

Since mid-century, the electric generating capacity of the four operating affiliates of The Southern Company family has increased by more than 100%. To provide facilities for increased electric power needs in the immediate future, the companies are investing an additional $500 million through 1960, strong proof that *the last half of the twentieth century belongs to the South!*

"FRAGRANCE" OF SHISHKEBABS in the ocean breeze brings forth smiles of anticipation from this group of Gulf Coast vacationers at the Shoreline Motel, near Destin, Florida. Development was started only six years ago on the "Miracle Strip" between Panama City and Pensacola. This and many other popular vacation spots in the South annually attract thousands from all parts of the nation.

THIS GLASS JAR is one of a wide variety produced at the newly-opened, multi-million dollar Owens-Illinois glass container plant in Atlanta, Southeast's largest and world's most modern. With an output ranging from half-ounce vials to gallon jugs, the plant has ready customers among increasing numbers of Southern food, drug, chemical and beverage manufacturers. The plant employs around 800.

BERRY SCHOOL students march to chapel on the beautiful 30,000-acre campus near Rome, Georgia. A log cabin school was founded in 1902 by Martha M. Berry to provide educational opportunities for mountain children. Today's $12 million facilities include coeducational Berry College, Mt. Berry School for Boys and a nursery school. Over half of the students work at the school to earn their tuition. Fourteen states are represented in the student body.



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COST ONLY $3.32 A SQUARE FOOT

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$4.00 a sq. ft. for this 6,000 sq. ft. warehouse and air-conditioned office.

$2.00 a sq. ft. for this 10,000 sq. ft. hanger, including expensive hanger doors at each end

This 7,000 sq. ft. warehouse and 450 sq. ft. office of the Benton Bros. Drayage & Storage Co., Brunswick, Georgia, was completed in 40 days at a total cost of only $3.32 a square foot. This included a reinforced concrete floor 42" above ground level; two 10' x 20' canopies; three overhead doors; all heating, wiring and plumbing, including three toilets and shower; insulated, air-conditioned office with brick side-walls; painting.

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- Multiple units of virtually any width, height, length

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Steel Building Division

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NEW PLANTS

Evansville — Mead Johnson Co., research labs. $8.5 million.

Fairbanks—Michigan Electric Co., power plant. $2.5 million.

Fairmount—G. B. C. Chemical Corp., Earl Campbell, Pres., agricultural chemical and plant food warehouse. Oper. est. to begin Sept., 1958. 26,000 sq. ft.

Ft. Wayne—Caldwell Packaging Co., meat and produce packages. 8,500 sq. ft. (B)

Gary—United States Steel Co., metallurgical labs. Under const. $1 million.

Indianapolis — Keyless Lock Co., locks. $400,000.

Lagrange—Sealed Power Corp., auto parts. 350,000 sq. ft. (C)

La Paz—Ritz-Craft Corp. 21,000 sq. ft.

Madison—Chain Belt Co., U. S. 421, William Sparling, Vice Pres.; heavy road building machinery and equip. Oper. est. to begin early, 1959. 125,000 sq. ft. (C)

Marion—Essex Wire Corp. 115,000 sq. ft. $800,000.

Muncie—Better Bite Dog Food Co. has acquired site.

New Albany—National Homes Corp., Grant Line Rd., James Price, Bd. Chmn.; kitchen cabinets and doors for prefabricated homes. Oper. est. to begin Oct., 1958. 110,000 sq. ft. (D)

Veedersburg — Covault-Poindexter Electric Furnace Co., S. Mill St., Darrell Covault, Co-Owner; electrical furnaces. Oper. began July, 1958.

IOWA

Audubon — Emmert Co., farrowing stalls, wagon unloading device. In oper.

Cherokee—Cherokee Bottling Co., W. Elm St., Fred C. Crosser, Owner; soft drinks. In oper.

Cherokee — Northwestern Bell Telephone Co., Main and 6th St., B. E. Adams, Pres.; dial system center. Oper. est. to begin Feb., 1959. $750,000.

Cherokee — Walnut Grove Products Co., Inc., U. S. Hwy. 59, E. A. Kelloway, Pres.; livestock and poultry feed supplements and minerals. Home office: Atlantic, Iowa. Oper. est. to begin Feb., 1959. $650,000. (B)

Des Moines—Factory Direct Distributing Co., 1553 E. Grand St., farm equip., farm products-selling, furniture, water equip. In oper.

Des Moines — Meredith Publishing Co., 5701 Park Ave., Fred Bohen, Pres.; printing and publishing plant. Oper. est. to begin late 1960 or early 1961. 500,000 sq. ft. $10 million plus.

Hamburg — Crown Line Plastics, plastic pipe. In oper.

KANSAS

Coffeyville—H. A. M. Grain, Inc., grain elevator, conveyor. Under const.

Junction City—Wichita Jeans, Inc., E. T. Ellis, Pres., women's jeans and slacks. Oper. began Aug., 1958. (B)

Wichita—Architectural Art Mfg. Co., 3227 N. Hillside, W. W. Thom, Owner; ornamental iron, aluminum and bronze. Oper. est. to begin Nov., 1958. (B)

KENTUCKY

Ashland—Ohio River Chemical Co., Jack Straub, Off., capralactum. Controlled by Spencer Chemical Co. and Industrial Rayon Corp. Oper. est. to begin 1960. $10 million. (C)

Greensburg—Armour Co., Charles A. Williams, Mgr., poultry processing. In oper.

Lebanon — Jane Sportswear Co., ladies' skirts. In oper. (B)

Murray—J. C. Chemist Co., Don Keller, Owner, adhesives. Oper. est. to begin Sept., 1958.

Williamstown — Sydney-Thomas Corp., plastics. Home office: Cincinnati. Oper. est. to begin Sept., 1958. (D)

LOUISIANA

Berwick—Natural Gas Liquids Corp., gas separation plant planned. Home office: Houston. $6 million.

Marero — Celotex Corp., R. F. Freeman, Mgr., acoustic tile and wallboard. Oper. est. to begin late 1958. $638,522.

New Orleans — Louisiana Power & Light Co., W. O. Turner, Pres., power plant planned. Oper. est. to begin early Summer, 1961. $Multi-million.

MAINE

Bangor—Rudman Beverage Co., Pepsi Cola Bottling Co., Ellsworth Rd., Brewer Ind. Area, David E. Rudman, Pres.; bottling plant, warehouse. Const. began July, 1958.

MARYLAND

Baltimore—American Waist Band Co., 113 S. Hanover St., David Wendell, Mgr.; bindings and waist bands. Has been issued permit to erect 30,000 sq. ft. plant on Central Ave.

Baltimore — Hearst Consolidated Publications, Inc., Lombard St., Fred I. Archibald, Pub.; newspaper office planned. $Multi-million.

Baltimore—Horn-Shafer Co., Inc., 531 W. Pratt St., William Gilbert Horn, Jr., Pres.; printing. In oper. 10,000 sq. ft.

Baltimore—North Point Co., Inc., 3838 N. Point Blvd., Oscar Meyer, Pres.; steel fabrication shop. Under const.

MASSACHUSETTS

Brockton—E. C. Hall Co., John Hall, Pres., grocers' wholesale. In oper. 75,000 sq. ft. warehouse. (B)

Cambridge — International Business Machines, business machines. Oper. est. Nov., 1958. $750,000. (B)

Danvers—Sylvania Electric Corp., Harry F. Callahan, Off., electrical products. In oper. 118,000 sq. ft.

Needham—Barbour-Green Co., heavy machinery. In oper. 50,000 sq. ft. warehouse.

New Bedford—Omega Aircraft Corp., Bernard W. Sznycer, Pres., heliocopters, spare parts plant planned. (D)

Rowe—Yankee Atomic Electric Co. Oper. est. to begin mid-1960. $50 million.

Springfield — Consolidated Products Mfg. Corp., Dorset St., Irwin C. Ricker, Pres.; waterproof fabrics. Oper. est. to begin Sept., 1958. (B)

Springfield — Friendly Ice Cream Corp., Curtis L. Blake, Pres., ice cream. Seeking 10 acre site for $1 million plant.

Waltham—Canada Dry Beverage Co., Roy Moore, Jr., Pres., tonics. Oper. est. to begin Nov., 1958. 130,000 sq. ft. (B)

Worcester—Norton Co., Stores St., Milton P. Higgins, Pres.; organic-bonded grinding wheels. Oper. est. to begin summer, 1959. $6.5 million.

MICHIGAN

Alma — General Telephone Co., T. A. Saunders, Pres., increased facilities. Under const. $1.15 million.

Ann Arbor—Reynolds Chemical Products Co., U. S. 23 and Eight Mile Rd., factory. Oper. est. to begin Sept., 1958. $239,000.

Benton Harbor — Producers Creamery, Harold C. Van Kampen, Pres., creamery. In oper. $1.5 million. (C)

Blissfield—Consolidated Mills, Inc., alfalfa mill planned.

Detroit—Boydell Brothers Co., W. C. Boydell, Pres., administration center. Under const. $250,000. (C)

Detroit — Jones & Laughlin Steel Corp., Avery C. Adams, Pres., steel div. In oper. $500,000.

Farmington—American Bakeries Corp., distribution center. Oper. began Summer, 1958. $150,000. (B)

Grand Rapids—Blandin Paper Co., paper plant planned. $1.5 million.

Jackson—Michigan Gas Storage Co., natural gas facilities planned. $3.99 million.

Middleville—Eat-A-Treat, H. R. Stagner, Pres., candied apples. Oper. began Aug., 1958. (C)

Oakland County—Foamcrete, Inc., John R. Strang, Pres., Betocel—new kind of concrete.

St. Joseph—Heath Co., Div. of Daystrom, Inc., Robert Erickson, Pres., stereophonic sound kits. In oper. $1.15 million. (D)

Sturgis — Bound Brook Oil-Less Bearing Co., W. R. Toeplitz, Pres., powder metallurgy. Oper. est. to begin late, 1958. $1 million. (B)

Three Rivers—Molded Products Sales Div., Dayton Rubber Co., Clowes Christie, Pres., molded rubber products plant planned. Home office: Dayton.

MINNESOTA

Elk River—Rural Cooperative Power Assn., nuclear power plant. Under const. $13 million.

Minneapolis — North Central Lightweight Aggregate Co. In oper. $1 million.

New Hope — Minneapolis Gas Co., liquid propane storage plant planned. $1 million.

MISSISSIPPI

Biloxi—DeJean Packing Co., Elmer Williams, Pres., cat food. Oper. est. to begin Sept., 1958. $250,000.

Brooksville—Kraft Foods, R. K. Stewart, Mgr., cheese. Reopened.

Bruce—Calhoun Grain And Seed Elevator Co., Inc., J. H. Hellums, Off., office, warehouse, mill. Oper. est. to begin Fall, 1958.

Jackson—First Mississippi Corp., Fred A. Anderson, Jr., Pres., multi-wall paper bag plant planned. $1 million. (C)

Tupelo—International Minerals And Chemical Corp., Plant Food Div., Sam P. Marshall, Jr., Mgr. Hdqrs. moved from Montgomery, Ala.

Tupelo—North Mississippi Shippers Assn., freight forwarding service. Oper. began Aug., 1958.

Water Valley—Water Valley Poultry Corp., poultry processing. Aff. of Pride of Virginia Poultry Corp. Oper. est. to begin late 1958. 26,000 sq. ft. (C)

Yazoo City — Mississippi Chemical Corp., C. S. Whittington, Pres., solid urea, high nitrogen liquid fertilizers. Oper. est. to begin Fall, 1959. $2 million.

MISSOURI

Chillicothe — Donaldson Co., Inc., air cleaners and filters, vehicle engine accessories. Home Office: St. Paul. Under const. on 20 acre site. 46,500 sq. ft. $275,000. (B)

Fairfax — H. B. Fuller Co., 150 Funston Rd., paste and glue mfg. plant, warehouse, offices. Oper. est. to begin early 1959. 17,000 sq. ft.

Hazelwood—Chevrolet Motor Div., General Motors Corp., regional supply depot. In oper. 357,000 sq. ft.

Holden—Rockledge Mfg. Co. Subs of Comfort Equip. Co. Under const. 24,000 sq. ft.

Marquand — M. D. Mfg. Co., marking crayons, oil stencil paper. In oper. (B)

St. Louis—Walsh Refractories Corp. Oper. est. to begin early 1959. $1 million.

Sedalia—Gann Awning And Mattress Co., 216 S. Lamine, Raymond Gann, Pres.; mfg., sells, renovates awnings and mattresses. In oper.

MONTANA

Pablo—Plumb Creek Lumber Co., D. C. Dunham, Pres., dimensional lumber. Oper. est. to begin Sept., 1958. $1.5 million.

NEBRASKA

No plants reported.

NEVADA

Henderson—AFN, Inc., high-energy boron fuel pilot plant in oper. Owned by American Potash & Chemical Corp. and Food Machinery And Chemical Corp. and National Distillers.

Las Vegas — Edgerton Germeshausen And Grier, Alexander M. Clark, Vice Pres., technical engineering lab. 40,000 sq. ft. (C)

NEW HAMPSHIRE

Concord — Dictaphone Corp., Albert E. Diem, Vice Pres., Dictaphone Dictablet records. Oper. est. to begin Oct., 1958. 13,000 sq. ft. (B)

Manchester — Foster Grant Co., nylon-6 plant. In oper. $1 million.

Nashua—Hampshire Chemical Corp., chemical plant. In oper.

NEW JERSEY

Clifton—Alfred Allen Watts Co., Joseph Steir, Pres., sales promotional material. Under const. 70,000 sq. ft.

Edison — American Can Co., Park Ave., data processing center. Oper. est. to begin late 1958. (B)

Hackettstown — M & M Candies, Robert Morrison, Vice Pres., new office and plant. Moving from Newark. Subs. of Food Manufacturers, Inc. Oper. est. to begin Fall, 1958. (D)

Morristown — Cessna Aircraft Corp., airplanes, administration and parts bldg., hangar. Const. began July, 1958.

Newark — Nopco Chemical Co., 60 Park Place, new hdqrs. for accounting, advertising, executive and sales depts. In oper.

Patterson—Lazzara's, Madison and Getty Aves., Cosimo Lazzara, Pres.; baking plant. Oper. began July, 1958. 80,000 sq. ft.

South Hackensack—Cravenette Co., U.S.A., 60 Romanelli Ave., Robert C. Hunzinger, Pres. Moving from Hoboken. Oper. est. to begin Oct., 1958.

NEW MEXICO

Portales—Casing Products Co., Charles R. Cowles, Off., natural casings for meat products. Moved from Los Angeles. Hdqrs: Sacramento. Oper. est. to begin Sept., 1958. (C)

Artesia—G. O. Cellum Produce Co., P. R. Allen, Off., carrot processing. Home office: Elsa, Texas. In oper. (C)

Belen—Gibson Mill Co., T. B. Gibson, Owner, feed mill and hatchery, dog food. Home office: Albuquerque. Under const.

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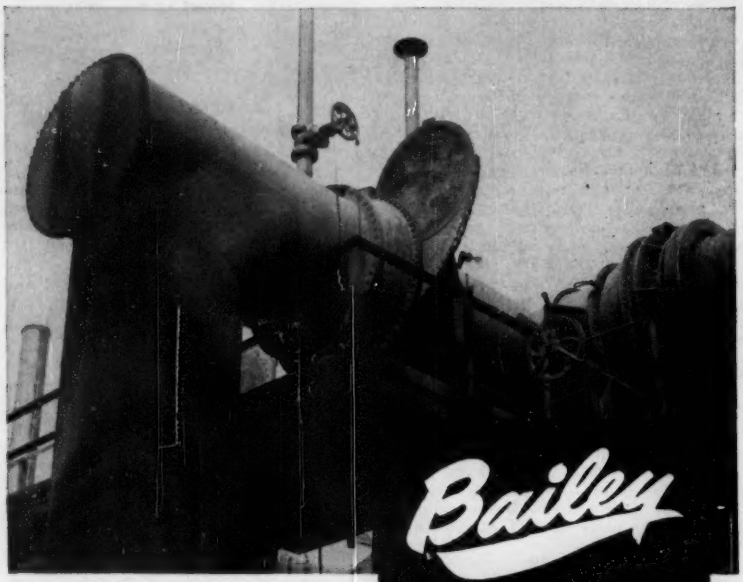
Operate Easily Even in Large Sizes



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NEW PLANTS

NEW YORK

Bronx — W. J. Fitzgerald Paving Co., Manida St., has purchased site.

Cortland — Smith-Corona Marchant Co., Emerson E. Mead, Vice Pres., portable typewriter parts. Oper. est. to begin mid-1960. 150,000 sq. ft. (D)

Fredonia—Fredonia Pickle Co., Union and Cushing Sts., Sam Mancuso, Off.; varieties of pickles. Oper. began July 1958.

Glens Falls—Pepsi-Cola Bottling Co. Oper. est. to begin Sept., 1958. (B)

Gloversville—Mohawk Cabinet Co., Arterial Hwy., Ted Hoye, Pres.; freezer cabinets for frozen food display. Oper. began Aug., 1958. 100,000 sq. ft. $450,000.

Niagara Falls—Carborundum Co., Clinton F. Robinson, Pres., grinding wheels, other vitrified product lines. Const. began Aug., 1958. $10 million.

Penfield—General Packaging Corp., Panorama Park, Penfield Rd., Craig Smith, Pres.; food packages. Oper. est. to begin Oct., 1958.

Port Chester — Emerol Mfg. Co., 331 N. Main St., William C. Pierce, Pres.; oils and top cylinder lubricators. Centralization of New York and Chicago operations. Oper. began July, 1958.

Ravena — Fran Mushroom Co., Nicholas Frangella, Pres., mushroom processing and canning. In oper.

Rooseveltown — Chevrolet Div., General Motors Corp., parts foundry. Under const. $15 million.

Rooseveltown — Reynolds Metals Co., aluminum. Oper. est. to begin 1959. $100 million. (E)

Rosendale — Knaust Brothers Products, Hickory Bush-Whiteport Rd., Herman Knaust, Pres.; mushroom growing and processing. Oper. est. to begin 1963. $2 million. (E)

West Coxsackie — Knaust Brothers Tray-crop Plant, Bailey St., Herman Knaust, Pres., mushroom growing plant. Under const. $250,000.

Yonkers — Harlem Paper Products Corp., Pier St., Alvin Philips, Off.; paper and paper products, conversion plant, warehouse, office planned. (C)

NORTH CAROLINA

Asheville—Quaker Oats Co., I. S. Riggs, Vice Pres., poultry feed mill. Under const. (B)

Belmont — Hazel & Wright Knit Hosiery Mill, Inc., finishing of men's argyle hosiery. (B)

Burlington—Foster Hosiery, W. B. Foster, Pres., hosiery finishing. Oper. began July, 1958. (C)

Burlington—Boland-Horne Associates, John A. Boland, Jr., Off., "Woodall Fabrics", decorative fabrics for homes. Co. in process of organization. 35,000 sq. ft. (C)

Charlotte—C. M. Hall Lamp Co., automobile and truck headlights and tail lights. Oper. est. to begin Fall, 1958. 62,500 sq. ft. (D)

Charlotte — New Dixie Lines, Inc., office, terminal and truck line maintenance facility. Under const. $300,000.

Gastonia — Max Pollack Co., Inc., thread finishing. (B)

Hickory—Spry & Watson Mills, Inc., cotton weaving. (B)

High Point—Consolidated Bus Lines, Inc., Bob Moore, Mgr., repair shop. In oper.

High Point—High Point Furniture Industries, Inc., Harry Samet, Pres., record cabinets, hi-fi cabinets, tables. In oper. (B)

High Point — Norwood Distributing Co.,

2327 English St., J. R. Siegel, Sect'y.; electronics, assembly of hi-fi radios and phonographs. Oper. began Aug., 1958. Will move into new 20,000 sq. ft. bldg., late, 1958. (B)

Lumberton — Jone Knitting Co., Oliver Hodgson, Mgr., knitted garments. Oper. began July, 1958. $1.8 million. (C)

North Wilkesboro—Elizabeth Hosiery Mills, girls' and boys' hosiery. (B)

Roxboro—Combo Industries, Charcoal Div., raw charcoal.

Thomasville—Premiere Furniture Co., upholstered living room furniture. (B)

Warrenton—Carolina Sportswear Co., Raymond Rarick, Mgr., sportswear. Oper. est. to begin Fall, 1958. 40,000 sq. ft. $361,000. (D)

NORTH DAKOTA

No plants reported.

OHIO

Barberton — Columbia-Southern Chemical Co., W. S. Straub, Works Mgr., cement plant. Oper. est. to begin Dec., 1959. $7 million.

Cincinnati — Vulcan Mfg. Co., chemical process equip. Oper. est. to begin Jan., 1959. $1 million plus.

Cleveland — Deluxe Check Printers', Inc., printing plant and offices. Oper. est. to begin 1958. $500,000.

Cleveland — General Electric Co., Lamp Div., Lamp Glass Dept., J. K. Kebe, Off.; research, engineering and administration bldg. Oper. est. to begin 1960. 150,000 sq. ft. $5.8 million.

Columbus—Western Electric Co., 6200 E. Broad St., plant and office. Oper. est. to begin Spring, 1959. 1.5 million sq. ft. $50 million.

Coshocton—Holmes County Rural Electric Co-Op Headquarters, Harold Uhl, Mgr., bldg. to house all operating equip., offices, storage. Oper. est. to begin 1958.

Delaware—Sunray Stove Co., George E. Mumma, Pres., gas ranges. Oper. began July, 1958. 105,000 sq. ft. $1.5 million. (C)

Delaware — U. S. Dept. of Agriculture Laboratory, Dr. Carl E. Seliskar, Chief, labs. and offices. $350,000. (B)

Hicksville—Syncro Corp., Meuse Argonne Rd., Maynard Andrea, Pres.; electrolytic capacitators and motor-run Dielectric capacitators. Oper. began Aug., 1958. 15,000 sq. ft. $200,000. (C)

Lockland—Merry Mfg. Co., Wayne Ave., Anthony L. Ach, Pres., toys. Consolidation of 3 plants. Oper. est. to begin late 1958. 34,000 sq. ft. (B)

Wooster — Ohio Agricultural Experiment Sta., L. L. Rummell, Dir., research in farm machinery, buildings, drainage. Oper. est. to begin 1958. $500,000.

Youngstown — American Paper Products Co., Southern Blvd. and McClurg Rd., J. Stanley Probst, Vice Pres.; business and church collection envelopes. Moved from East Liverpool. Oper. began July, 1958. $500,000. (C)

OKLAHOMA

Lawton—Gordon Cartons, Inc., paper cartons. Oper. est. to begin Sept., 1958. $300,000.

Muskogee — Industrial Electrical Machine Co. Moving from Independence, Kan. Oper. began Aug., 1958. (B)

Oklahoma City—Cameron Bldg. & Inv. Co., 2901 Classen, office bldg. In oper. 500,000 sq. ft.

Woodward—Bethlehem Steel Co., machine shop planned.

OREGON

Klamath — California Oregon Power Co.,

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Engineers: Herbert Manuccia & Associates, Washington, D. C.
General Contractors: Eugene Simpson & Bro., Alexandria, Va.

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Sam Richie, Mgr., electrical energy. Oper. est. to begin Oct., 1958. $12 million. (A)

Lakeview — Lakeview Mining Co., James Paulus, Supt., uranium. Oper. date indefinite. $2.5 million. (B)

Portland—Kendall Machine Works, 8407 SE 82nd Ave., powered go-carts. In oper. (B)

Portland—Plastimayd Corp., SE 7th Ave. and Grant St., Milton Druck, Pres.; vinyl plastic products, new plant. Oper. est. to begin Fall, 1958. 20,000 sq. ft. (B)

Portland—Tamco Mfg. & Engineering Co., 5413 NE Columbia, L. V. and Emil A. Ramberg, Parts., heating equip. In oper.

Portland—Sheridan Gear & Mfg. Co., NE Columbia Blvd., Robert Hall, Pres.; roller chain sprockets and gears, office, warehouse, mfg. plant. Operating co. of Western Gear & Mfg. Co. Oper. est. to begin Sept., 1959. 30,000 sq. ft.

PENNSYLVANIA

Bangor — Heyer Industries, Inc., service equip. for automobile and airplane engines. Under const.

Clearfield—LeJohn Co., electric fan plant planned. (C)

Conshohocken — Alan Wood Steel Co., Harleston R. Wood, Pres., iron powder plant. Oper. est. to begin early, 1959. $3.5 million. (A)

Downingtown — Pressed Steel Tank Co., Herman Merker, Pres., lab for testing liquefied petroleum gas storage and delivery equip. In oper.

Easton — Delightform, Inc., Kurt Menkel, Pres.; foundation garments, consolidation of operation planned. 181,000 sq. ft. $450,000. (D)

Freeport—Freeport Brick Co., F. T. Laube, Pres., tunnel kiln. Oper. began July, 1958. $1 million. (B)

Greencastle—Eastern Engineering and Mfg. Co., Inc., S. Church Lane, designing and building of run-abouts, race cars, variety of engineering services. Oper. began July, 1958.

Greensburg—Overmyer Mould Co., Rte. 30. Under const. 37,000 sq. ft. (C)

Harwick—Flannery Plant, Hite Rd., design and mfg. of store fixtures. Home office: Pittsburgh. Oper. began Aug., 1958. $500,000.

Hazleton — Beryllium Corp., Walter R. Lowry, Pres., beryllium fabrication. Hdqrs: Reading. Oper. began July, 1958. $1.2 million. (C)

Hazleton—Capitol Products, Valmont Ind. Park. In oper. (C)

Hazleton — Highway Trailer Co., Harold Meagher, Pres., truck trailers, cargo containers. In oper.

Indiana—Fisher Scientific Instruction Co. Under const.

King of Prussia—Wiedemann Machine Co., Gulph Rd., Otto F. Wiedemann, Pres.; turret punch presses, general offices, engineering and manufacturing. Moved from Philadelphia. Oper. began July, 1958. 76,200 sq. ft.

Monroeville—United States Steel Corp., W. F. Munford, Vice Pres., electromechanical development lab. Const. began Aug., 1958. 54,000 sq. ft.

Erie—Chemetron Corp., National Cylinder Gas Div., Charles J. Haines, Pres.; liquid oxygen, nitrogen, argon. Home office: Chicago. Oper. est. to begin Jan., 1959. $3 million.

Philadelphia—Scott Paper Co., Thomas B. McCabe, Pres., office bldg., chemical and mechanical research lab. Oper. est. to begin Fall, 1960. 355,000 sq. ft. $10 million. (D)

Pine Grove—Patjo Leather Corp., leather goods. Oper. began July 1958. (B)

Pittsburgh — United States Steel Corp., Charles F. Hood, Pres., sintering plant. Under const.

Reading—Carpenter Steel Co., corrosion research lab. In oper.

Reading—Reading Tube Corp., refinery. In oper. $4 million.

State College — Haller, Raymond and Brown, Inc., Circleville Rd., Dr. John L. McLucas, Pres.; electronic research and development, new building. Owned by Singer Mfg. Co. Oper. est. Dec., 1958. 27,000 sq. ft. (B)

Tulitytown—Keystone Pencil Co., ball point pens. Under const.

Tyrone — West Virginia Pulp And Paper Co., J. Lynne Ferner, Mgr., flakeboard, building products. Oper. began July, 1958. $1 million. (B)

West Mifflin—Pesco, Inc., heavy steel plate and structural shape fabrication plant planned. 102,000 sq. ft. $1 million. (D)

Wilkes-Barre — Pioneer Mfg. Co., Inc., children's dresses. In oper. (D)

York—John C. Motter Printing Press Co., Rte. 30, John C. Motter, Pres.; design and mfg. of web and rotogravure presses. Oper. est. to begin early, 1959. $300,000. (C)

PUERTO RICO

Aibonito — La Vega Co., Aibonito-Preventorio Rd., K. J. Forrey, Off.; ladies' fabric gloves. In oper.

Naranjito — Olazco Mfg. Corp., Georgetti St., Ramon B. Rodriguez, Off., men's and boys' work shirts and pants. In oper.

Rio Piedras—Moreno Wire Works, Albert Rio Piedras-Caguas Rd., Albert Moreno, Pres.; wire enclosures, wire baskets. In oper.

Toa Alta — International Metalloids, Inc., high purity silicon. Oper. est. to begin Oct., 1958.

Vieques — Diamond Industries of Puerto Rico, Inc., Andrew Fried, Mgr., uncut diamond processing. Oper. began Aug., 1958. 10,000 sq. ft. (B)

RHODE ISLAND

Pawtucket — Madison Industries, Inc., 569 Mineral Spring Ave., Edwin B. Krasue, Bd. Chmn.; highspeed steel and carbide cutting tools. Moving from Muskegan, Mich. Oper. est. to begin Fall, 1958. (B)

Pawtucket—Slumberland Products Co., 387 Pine St., Arthur M. Warshaver, Pres., upholstering of roll-away beds, divans, studio couches. Oper. began July, 1958. (C)

SOUTH CAROLINA

Bennettsville—Marlboro Electric Cooperative, Robert B. Awbrey, Mgr., rural electrification. Const. began July, 1958.

Conway—Johnson Cabinet & Millwork Co., bedroom furniture. (B)

Greer — Piedmont Tool & Machine Co., broaches (metal cutting tools). Oper. est. to begin Fall, 1958.

Hampton—International Tool Co., Harry E. Kohl, Pres., tools, dies, jigs, precision instruments. Home office: Dayton. Oper. est. to begin Oct., 1958. (B)

Laurens—LOF Glass Fiber Co., glass fiber processing. Const. est. to begin Fall, 1958. $Multi-million. (E)

Seneca—Kendall Co., Walhalla Hwy., Richard R. Higgins, Pres.; textile plant. Home office: Boston. One 100,000 sq ft. unit est. in oper. mid-Sept., 1958. Second 10,000 sq. ft. unit est. to be in oper. late Fall, 1958.

SOUTH DAKOTA

Rapid City—New Moon Mobile Homes, E. Hwy. 79, James Redman, Pres.; mobile trailer homes. In oper. $1 million. (D)

Rapid City — Rushmore Lumber Co., Leonard Lundgren, Pres., lumber mill. In oper. $600,000. (C)

TENNESSEE

Chattanooga — Thomas R. McAfee Co., Thomas R. McAfee, Owner, lighting fixtures. Oper. est. to begin Nov., 1958.

Elgin — Mar-Pak Michigan, Inc., wooden boxes and crates. Home office: Detroit. Oper. began Aug., 1958. (C)

Grand Junction—Unidentified Firm, fiberglas building materials. Oper. est. to begin Jan., 1959. (B)

Greeneville—Metals Engineering Corp., E. C. Greenwood, Mgr., metal stampings, tool and die work. Oper. est. to begin Nov., 1958. 50,000 sq. ft. $400,000. (B)

Henderson — Savannah Mfg Co., trousers. Oper. est. to begin Jan., 1959. (C)

Knoxville — Chapman Drug Co., Pleasant Ridge Rd. and Sycamore Dr., Pleasant Ridge Ind. Dist., George Bailey, Pres.; office, display rooms, warehouse. Oper. est. to begin Jan., 1959. 52,000 sq. ft.

Knoxville—Federal Chemical Co., Mynders Ave., NW, Benny Surrett, Mgr., warehouse for commercial fertilizers. Oper. began Aug., 1958.

Knoxville — Knoxville Public Warehouses, Robert Duncan, Mgr., general storage and distribution service. In oper. 300,000 sq. ft.

Knoxville—Nesbitt Bottling Co., 302 Tazwell Pike, Leonard W. Dugan, Pres., soft drinks. Oper. began July, 1958.

Knoxville—Teco Supply Co., 2301 Forrest Ave., A. L. Slinnett, Gen. Mgr.; "Teco Tops", plastic counter tops for homes and restaurants. In oper.

LaFollette — Electro-Mechanical Products Co., auto accessories, electronics. Home office: Garden City, Mich. Oper. began Aug., 1958. 33,000 sq. ft. (C)

Loudon — Unidentified Firm, aluminum building products. Oper. est. to begin Oct., 1958. (C)

Nashville — W. G. Bush and Co., Second Ave., John S. Herbert, Pres.; brick making oper., tunnel brick kiln. Oper. began July, 1958. $1 million.

Nashville—Nashville Milk Producers, Inc., Sidco and Armory St., Glenn G. Summers, Mgr.; office, receiving sta. Under const. $350,000.

Nashville—Tennessee Products & Chemical Corp., 2611 W. End Ave., hdqrs. In oper.

Oneida — Oneida Plastics, Inc., Martin Justice, Owner, polyethylene bags. Oper. est. to begin Oct., 1958.

TEXAS

Abilene—AMCO, Inc., Abilene Plaza, C. E. Dugger, Pres.; precision parts for aircraft and missiles. Oper. est. to begin Fall, 1958. 15,000 sq. ft.

Brady—San Saba Sand Co., Beryl Easley, Mgr., sand for special uses. In oper.

Commerce — Leighton Mfg. Co., Gordon Edwards Bldg., Max C. Feldman, Pres.; garments. Home office: Dallas. In oper.

Conroe — Borden Metal Products Co., S. Hwy. 75, A. H. Borden, Pres.; floor gratings. Under const. on 20 acre site.

Corpus Christi — Foremost Dairies, Inc., 4232-4240 Lexington Blvd., dairy processing and storage plant planned. $500,000. (C)

Dallas—Capp Canvas Products Co., 1626 N. Industrial Blvd., Maurice E. Capp, Pres.; mfg. and repair of canvas products. In oper.

Dallas—Franell, Inc., 407 Austin St., Bur-

ton Weemick, Pres.; girls' sportswear. In oper. 20,000 sq. ft.

Dallas — Lorrie Kay of Dallas, 206-207 Wholesale Merchants Bldg., David Siegel, Off.; cotton knit coordinates. In oper.

Dallas — Mark of Dallas, Joe Goldstein, Off., men's casual jackets.

Dallas — Micro-Lube Sales, Brook Hollow Ind. Dist., Edward E. Ellis, Off., lubricating oils. Under const. 12,000 sq. ft.

Dallas—Southwestern Steel Container Co., Gordon D. Zuck, Pres., steel shipping containers. In oper. (C)

Odessa-Midland — Western Cement Corp., Everett E. Knott, Pres., cement. Const. est. to begin Fall, 1958. $8.5 million.

Ft. Worth—Dalworth Foundry Co., Mansfield Hwy., A. C. Raymos, Off.; magnesium and aluminum castings for aircraft and industry. Under const. (C)

Garland—Atlantic Engineering Corp., design and manufacture of manual, semiautomatic and automatic test systems for the semiconductor industry. In oper.

High Island—U. S. Sulphur Corp., H. T. McClain, Pres., extraction of sulphur from salt dome. Home office: Houston. Oper. est. to begin Nov., 1958. (B)

Houston — Bjorkesten Research Laboratories, plant planned. Home office: Madison, Wisc. $1.5 million.

Houston — United Salt Corp., Almeda-Missouri City Hwy., Lloyd P. Webre, Pres., manufacture and packaging of mineralized salt. In oper. $1 million. (B)

Lubbock — Lewter, Inc., Hwy. 84, D. W. Lewter, Pres.; beef slaughtering and dressing. Oper. est. to begin Jan., 1959. 25,000 sq ft. $1 million plus. (B)

Marshall — Longhorn Ordnance Works, Nike-Hercules rocket engines. Three buildings est. to be completed by late, 1959. 68,000 sq. ft. $3 million.

Mission — Anchor Gasoline Corp., natural gasoline plant. Home office: Tulsa. Oper. est. to begin late, 1958.

San Antonio—Green Thumb Fertilizer Co., Inc., 3603 S. Roosevelt, A. L. Dramberger, Off.; processing and distributing of hematite for soil conditioning purposes. In oper.

Sherman—Hardwicke-Etter Co., Hwy. 75, J. E. Jamison, Pres.; cotton ginning and earth moving equip. Has purchased 73 acre site for $1 million plant.

Sweetwater—Gifford-Hill Pipe Co., W. Alabama St., P. W. Gifford, Pres.; concrete culvert and sewer pipe. Home office: Dallas. Under const. $250,000 plus. (B)

Temple—Hank Mann, Inc., Hwy. 81 By-Pass, Hank Mann, Pres.; work clothing and sportswear. Home office: El Paso. In oper.

Tyler—Rose City Fertilizer Co., George W. McGuire, Pres., organic-based fertilizers. Under const. 25,000 sq. ft. (B)

Wink — Pan American Petroleum Corp., natural gasoline. Home office: Tulsa. Oper. est. to begin Dec., 1958.

UTAH

Ogden — Johnson Construction Co., L. T. Johnson, Pres., hot mix plant planned.

Salt Lake City—Cantlay & Tanzola, 21st North and Redwood Rd., Walter R. Berryman, Mgr.; tanker depot. Under const. 12,000 sq. ft.

VERMONT

No plants reported.

VIRGINIA

Bristol—Kelly and Green, Euclid Ave., film processing. Oper. est. to begin Sept., 1958. (B)

Farmville—Lindsey-Robinson Co., C. Grattan Lindsey, Pres., egg grading and packaging. Oper. est. to begin Fall, 1958. 20,000 sq. ft.

Newport News — Quality Venetian Blind Mfg. Co., 48th St. and Chestnut Ave., B. L. Epstein, Pres.; venetian blinds. Oper. est. to begin Fall, 1958. (B)

Newport News—Sampson Mfg. Co., textile products. Oper. est. to begin Fall, 1958. $105,000. (D)

Radford—Inland Motor Corp., Hugo Unruh, Pres., motors. Oper. est. Fall, 1958. $100,000. (B)

WASHINGTON

Mica — Gladding McBean & Co., C. W. Planje, Pres., heavy clay products. Oper. began July, 1958. $2 million.

Othello — Washington Co-Op., Louis M. Denton, Off., edible bean processing. Oper. began Aug., 1958. $300,000 plus. (A)

Tampa—Washington Ytong Corp., Dr. C. H. Larson, Pres., Ytong, lightweight, cellular building material. Oper. est. to begin June, 1959. $1.5 million. (B)

Wenatchee—Western Corrogated, Inc., Mel Balsiger, Off., corrugated cartons. Oper. began Aug., 1958. (B)

WEST VIRGINIA

Charleston—Pfaff And Smith Builders Supply Co. plans barge unloading facilities.

Leach—Ashland Oil & Refining Co., Inc. has optioned 200 acre tract along Big Sandy River.

South Charleston — Westvaco Chlor-Alkali Div., Food Machinery and Chemical Corp. plans dock facilities along Kanawha River.

WISCONSIN

Delaran — Sta-Rite Products, Inc., H. S. Lauterbach, Off., pumps, water systems. Oper. est. to begin Dec., 1958. 80,000 sq. ft. $600,000.

Merrill—Merrill Mfg. Co., F. E. Taylor, Off., wire goods, stampings. $400,000.

Racine—Wiscon Products, Inc., Hwy. 32, Henry Christensen, Off.; machine job shop, new plant offices, storage. Oper. est. to begin Oct., 1958.

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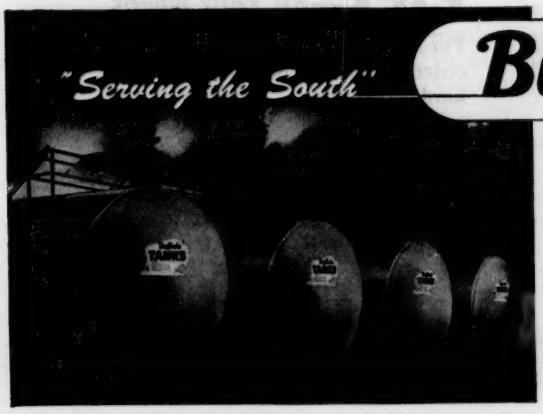

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WYOMING

Powell—F & M Ready-Mix Plant, Allen McKenzie, Co-owner, dredging oper. for sand, gravel, gold. In oper.

CANADA

ALBERTA

Edmonton — Imperial Oil Ltd., asphalt. Oper. est. to begin 1959. $1.5 million. (B)

BRITISH COLUMBIA

Burnaby—Bonus Foods Ltd., canned meats. New 8,000 sq. ft. plant replaces older facility. $250,000. (B)

Burnaby—Edward Lipsett Ltd., wholesale industrial supplies. Oper. est. to begin early 1959. 85,000 sq. ft. $700,000.

Port Alberni—MacMillan & Bloedel Ltd., newsprint, pulp, kraft paper. In oper. $10.3 million.

Ft. St. John—United Grain Growers Ltd., grain storage elevator. Under const.

Upper Campbell Lake—British Columbia Power Comm., Strathcona Development, electric power. In oper. $23 million.

MANITOBA

Winnipeg — Sylvania Electric (Canada) Ltd., distribution center. Oper. est. to begin Sept., 1958. 30,000 sq. ft.

NEW BRUNSWICK

Lancaster—Western Wire And Cable Co. Ltd., J. A. Kippan, Vice Pres., domestic and commercial wire and cable. Oper. began July, 1958. $700,000. (B)

St. John—Jos. A. Likely Ltd., Jos. A. Likely, Pres., pre-mixed concrete. Oper. began July, 1958. $600,000. (B)

NEWFOUNDLAND

No plants reported.

NOVA SCOTIA

No plants reported.

ONTARIO

Ajax—Nabor Foods Div., Kelly Douglas And Co., tea and peanut butter. Home office: Vancouver, B. C. In oper. 18,000 sq. ft.

Brockville—Du Pont of Canada, Maitland Works, technical lab. Under const. $700,000.

Cornwall—Howard Smith Paper Mills Ltd., fine paper. Home office: Montreal. Oper. est. to begin March, 1959. $12.5 million.

Elliot Lake—Rio Tinto Dow Ltd., crude thorium concentrates and refined metallurgical grades of thorium sulfate and thorium oxide. Subs. of Dow Chemical of Canada and Rio Tinto Mining Co. Oper. est. to begin May, 1959.

North York—Reynolds Aluminum Containers Ltd., 151 Bartley Dr., aluminum bakery supplies, frozen food containers, take-out containers. In oper.

Oakville — Pennsalt Chemicals of Canada Ltd., William P. Drake, Pres., chemical specialties, cleaners, sanitizers. In oper.

Peterborough—Peterboro Leather Products, D. Milne, Prop., leather products. (B)

Renfrew—Magline of Canada Ltd., lightweight magnesium products. Under const.

St. Catharines — Niagara Concrete Pipe Ltd., Birchmont Rd. and Hwy. 401, concrete products. Aff. of American-Marietta Co., Chicago. Under const. $1 million.

Toronto—Davies Truck Equip. Ltd., Kelfield Rd., F. W. Davies, Off., truck and trailer service depot. Subs. of York Transport Equip. Ltd. Oper. est. to begin Nov., 1958.

Toronto—Frederick Parker (Canada) Ltd., 429 Ellesmere Ave., Thos. C. Greenhough, Mgr.; road materials. Subs. of Frederick Parker Ltd. of Leicester, England. Oper. est. to begin Dec., 1958.

Toronto—Holiday Sportswear Mfg. Ltd., Orfus Rd., children's separates. Oper. est. to begin Dec., 1958. 32,000 sq. ft.

Toronto—Nerlich And Co., 1177 Leslie St., china, glass products, toys. Oper. est. to begin late 1958. 65,000 sq. ft.

Toronto—Sylvania Electric (Canada) Ltd., Vulcan St., R. E. Anderson, Mgr., distribution center and offices for Lighting Products Div. and Appliance Div. Oper. began Aug., 1958. 60,000 sq. ft.

PRINCE EDWARD ISLE

North Rustico—North Rustico Fishermen's Co-Op Assn., Ltd., J. G. Gaudin, Off., frozen filets of cod and haddock. Oper. began July, 1958. (B)

QUEBEC

Montreal—Dominion Steel Co., rolling mill planned.

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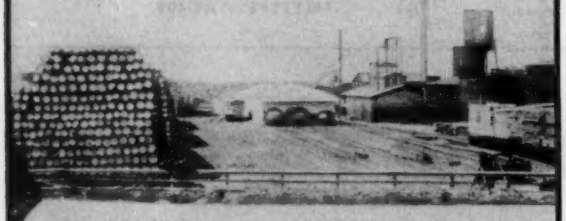

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Montreal—The Steel Co. of Canada has acquired site for steel-processing plant.

Montreal — Sylvania Electric (Canada) Ltd., head offices. In oper. $1.2 million.

Mt. Wright — Hollinger Corp., railways, steel mines, other facilities. Under const. $185 million.

Upper Peribonka River—Aluminum Co. of Canada, smelters, dam, power house. Under const. $250 million.

SASKATCHEWAN

Prince Albert — Burns & Co. Ltd., meat packing plant. In oper. $4.5 million. (D)

Regina—Prarie Drum Reconditioning Ltd., I. Chamish, Gen. Mgr., metal drum reconditioning service. Under const.

Saskatoon—Fibrolite Co., E. McNair, Part., fiberglass fabrication of boats, repair and maintenance work. In oper.

OTHER COUNTRIES

ARGENTINA

Buenos Aires — S. C. Johnson & Son de Argentina, Norman H. Dan, Off., wax plant planned. Subs. of Johnson Wax Co., Racine, Wisc.

Buenos Aires — Pfizer Argentina S. A., pharmaceuticals, animal feed supplements, veterinary products Subs. of Pfizer, New York. Oper. est. to begin 1960. $14 million. (D)

Cordoba—Willys Motors, Inc., Aff. of Industrias Kaiser Argentina, jeep vehicles. Subs. of Kaiser Industries Corp. Oper. est. to begin early, 1959. 75,000 sq. ft. $2 million.

BELGIUM

Antwerp — Raffinerie Belge de Petroles, catalytic reformer with desulfurization facilities. Oper. began Summer, 1958.

Bruges—Outboard Marine Co. Home office: Waukegan, Ill. Under const.

BRAZIL

Sao Paulo—Frank J. Prime, Off., television picture tubes. Aff. of Sylvania Electric Products. Oper. est. to begin early, 1959. 60,000 sq. ft.

COLOMBIA

Cali—Maizena, S. A., liquid glucose and dextrin. Under const.

GERMANY

Hamburg — BP Benzin-und Petroleum GmbH., butane, propane, isobutane, light petroleum. In oper.

HOLLAND

Pernis—Royal Dutch Shell, synthetic rubber. Oper. est. to begin 1960.

INDIA

Bombay—Godaveri Sugar Mills Ltd., acetic acid. Oper. est. to begin late 1958. $273,000.

IRAN

Ahwaz — Polyvinyl Chloride Plant, polyvinyl chloride, chlorine and caustic soda. Oper. est. to begin early 1961. $6.5 million.

MEXICO

Santa Clara—Industrial Quimica Pennsalt, S. A., Robert P. Ogden, Gen. Mgr., chlorine, caustic soda, sodium hypochlorite and muriatic acid. Subs. of Pennsalt Chemicals, Philadelphia. In oper.

PARAGUAY

Asuncion — Esso Standard of Paraguay, William Kalstner, Pres., refinery planned. Subs. of Standard Oil of New Jersey. $3 million.

PHILADELPHIA. Ground was to be broken early this month by Scott Paper Company for an office building and a large chemical and mechanical research laboratory. To be on a 41-acre site in Tinicum Township near Philadelphia, the new project will cost approximately $10 million. Construction is expected to be completed in the late summer of 1960. The office building will have 225,000 square feet of space and will accommodate about 800 Scott administrative and engineering personnel. It has been designed for integrated expansion later to accommodate 300 more persons. The research laboratory will contain some 130,000 square feet of space.

CALVERT CITY, KY. Air Reduction Chemical Company's new unit here, the first plant in the nation to produce vinyl stearate in commercial quantities, has just gone on stream. The new unit, with two million pounds a year capacity, is the fifth Airco unit to be completed here since 1953, where the company has invested more than $25 million in manufacturing operation. Construction will be started later this year on a sixth plant which will produce polyvinyl alcohol resin. This will increase the company's total investment in Calvert City to nearly $40 million.

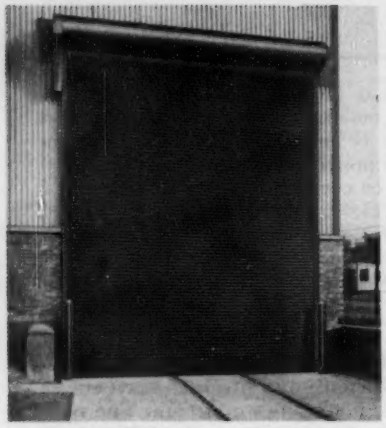
ORLANDO. Southern Steel Service Company, Inc., the first engineered metal serving company to locate in Florida, has just completed its new building here. Henry W. Doctor, president and founder of the company, said the new operation will serve all of Florida. Offices also are to be opened in the St. Petersburg-Tampa area and the Fort Lauderdale-Miami area, he said.

SHEFFIELD, ALA. Construction is well under way here on an expansion, to cost $65 million, of Reynolds Metals Company's Listerhill Alloys plant. The project is scheduled for completion in 1960. The company announced also that construction has been completed on its new Listerhill Reduction plant. The latter has an annual capacity of 112,500 tons of primary aluminum and is the largest of the seven aluminum reduction or smelting plants operated by Reynolds.

MOLINE, ILL. American Air Filter Company, Inc., has announced plans for a $750,000 addition to its Herman Nelson Division here. The new structure will contain 76,800 square feet of floor space and will increase the present facilities by approximately 50 per cent. A new crane in the expanded area will handle up to 4,500 tons of sheet steel annually in the new building. It is expected that the addition will be completed before the 1959 summer peak load. The division fabricates and assembles school classroom unit ventilators and school air conditioning equipment.

ROSENDALE, N. Y. Plans have been disclosed here for the construction of a plant to cost well over a million dollars by Knaust Brothers Producers, Inc., world's largest growers of mushrooms. The company said it plans to concentrate its mushroom growing activities, processing plant and offices here and will add a payroll of $1 million annually to the town's economy.

JACKSONVILLE, FLA. Construction on another full-line department store by Montgomery Ward & Company is slated to begin here in January. The new store will be built in the 43-acre Florida State Plaza Shopping Center. It will have 100,769 square feet of floor space on two floors, plus 34,311 square feet of outdoor sales space. Completion is scheduled for early spring of 1960, and it is expected that the new facility will increase Ward's employment here by approximately 300 persons.



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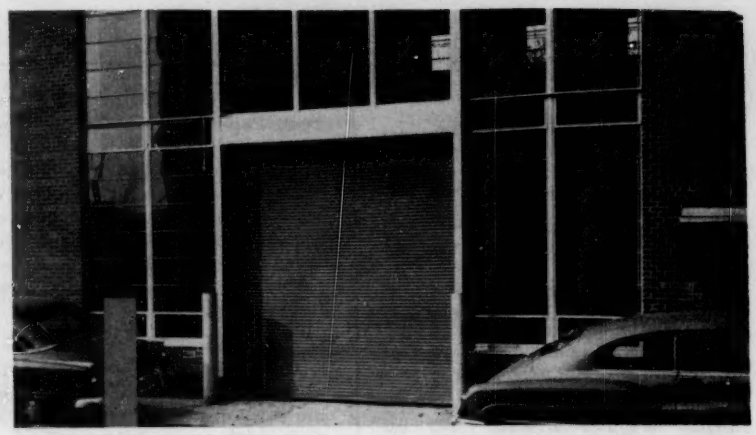

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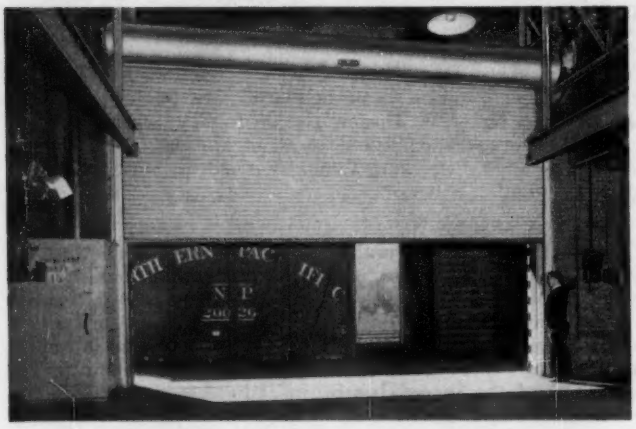
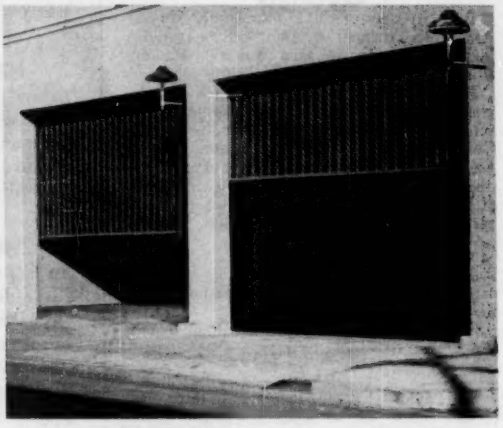


Kinnear Rolling Doors deliver full efficiency whether mounted on interior or exterior walls. Mounted outside, they permit full clearance of *ceiling-high* openings . . . also cut costs of new buildings by reducing door headroom requirements to zero!*



Kinnear Rolling Grilles combine coiling upward action of Kinnear Rolling Doors with a rugged assembly of steel bars and links in attractive "openwork" design. They prevent trespassing without blocking light, air, or vision.

How you save space, speed traffic and cut upkeep with

KINNEAR ROLLING DOORS and Rolling Grilles

Kinnear *originated* the door with the curtain of interlocking steel slats. It has so many advantages that only a few highlights can be given here.

For example, note that *all* surrounding floor and wall space remains clear and usable at all times, whether the door is opened, closed, or in action.

The closed door guards the opening with a *continuous all-metal curtain*—extra protection against intruders, vandals, troublemakers as well as against wind, weather and fire.

Every Kinnear Door is *Registered*. Full details of all parts are kept permanently in Kinnear's fireproof vaults. With parts *always* replaceable, your doors will never be "orphans".

For maximum durability Kinnear's special hot-dip galvanizing coats the entire curtain with a full *1.25 ounces of pure zinc per square foot of metal* (ASTM standards). Kinnear adds a special Paint Bond that permits immediate, thorough coverage and lasting adhesion of field-applied paint.

Kinnear Rolling Doors are available for old or new buildings, with motor, manual or mechanical operation. Write for complete information.

* *Also available:* Interlocking-slat Kinnear Doors of modified design, for COUNTER SHUTTERS—widely used in cafeterias, serving counters, tool and parts cribs, etc.

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DIRECTED BY
Richard Edmonds . . 1882-1930
Frank Gould 1930-1943
William Beury . . . 1943-1955
McKinley Conway . . 1956

MANUFACTURERS RECORD
(IN REVIEW)

"What Enriches Any Region Enriches The Nation"

SEPTEMBER 1884 (AS ABSTRACTED MORE THAN 70 YEARS LATER) BALTIMORE, MD.

AMERICAN EXPOSITION

The managers of the American Exposition are putting forth vigorous efforts to make it a great success. Profiting as they doubtless will by the experience of the last Exposition, they hope to avoid the mistakes that for a while threatened the success of that. A $500,000 company has been organized, and having secured the buildings of the World's Exposition, will open the American Exposition in November. The prospectus of the new Exposition will be found of much value to all who contemplate making exhibits at New Orleans this winter.

FINE FLOUR

The oldest brand of flour in the United States is the "Patapsco", made by the C. A. Gambrill Manufacturing Company, of Baltimore. This brand was established over 100 years ago. This company own and operate three mills of 500 barrels capacity each, making their daily output of flour 1,500 barrels. These mills are fitted with the latest and best machinery to be had, regardless of cost, and their management is in the hands of skilled men who thoroughly understand how to make good flour. There is no doubt of the fact that man needs no better flour than the "Patapsco Superlative," and even if he did need it, he would not be able to find it in this country. Those who have tested by continued use the leading brands of flour made in this country, give the "Patapsco" the preference over any other make.

LEGAL JOTTINGS

A Pennsylvania judge of the Supreme Court of that State has just decided that a man has no insurable interest in the life of his mother-in-law.

Some children were firing Roman candles on Christmas Day, 1883. A child of six years pointed a candle toward a group of children, and a boy in the group lost his eye from the discharge. The parent of the child which fired the candle was temporarily and necessarily absent at time of the accident. Suit was brought by the father of the injured child against the parent of the other, and a verdict of two thousand dollars was rendered. On appeal this verdict was sustained.—Supreme Court of Louisiana, 1885.

The fact that a man runs away after shooting another is no evidence of his guilt where the shooting was public.—American Law Register.

A man who sued a railroad company for injuries to his person, refused to permit the railroad physician to examine his wounds. Held: He could not be compelled to permit such examination.—Supreme Court of Nebraska.

BUSY TIMES

A dispatch from Boston says: "From all over New England there come reports of a great revival in manufacturing industries. In Maine several new shoe factories are being constructed, and the cotton mills are running on larger orders. The lumbering interest promises to be larger than usual this winter. Some new pulp and paper mills are being constructed, and work has been resumed in some small points and iron mines. In New Hampshire, Manchester shows great improvement. The Amoskeag corporation has just given out a contract for a large new mill. The hosiery and cotton mills and the car works of Lecoria and Lake Village report heavy orders. In Massachusetts there is a general revival in the shoe factories of Lynn and Haverhill. There has been increased demand for help at higher wages. Bracton and Holyoke are growing rapidly. In Lawrence the old Washington mills are to start with 300 hands, and the Atlantic mills are running on full time with a full force. The large cutlery works at Shelburne Falls will resume soon on full time. North Adams, Springfield, Westfield, Pittsfield, Marlboro, Fitchburg and Worcester make a good showing. In Rhode Island there is increasing activity in Providence, Pawtucket, Valley Falls and Westerly. In Connecticut, New London, Stafford Springs, Hartford, New Haven, Meriden, New Britain, Norwalk and Waterbury are improving, while Norwich is exceedingly dull. In Vermont, Brattleboro is booming, and the marble and slate industries of Rutland are more active than for some time past."

RIVER VIEW HOUSE

We are in receipt of an attractive photograph of the River View House, Oxford, Maryland, of which Mr. Rowland Hill is the proprietor. Oxford is a delightful country town possessing advantages as a summer resort which, if generally known, would soon fill half a dozen hotels with guests. The sailing is unsurpassed, and boats of all sizes, from canoes to schooners, can be hired at almost ridiculously low prices; fishing is good; the drives are very attractive over the best shell roads, and there is entire freedom from malaria.

All the natural advantages of the place combine to make the town a most inviting summer resort. The River View House, of which Mr. Hill became proprietor last winter, is well kept, the fare is good and the cooking excellent, and a more accommodating host than Mr. Hill could hardly be found anywhere.

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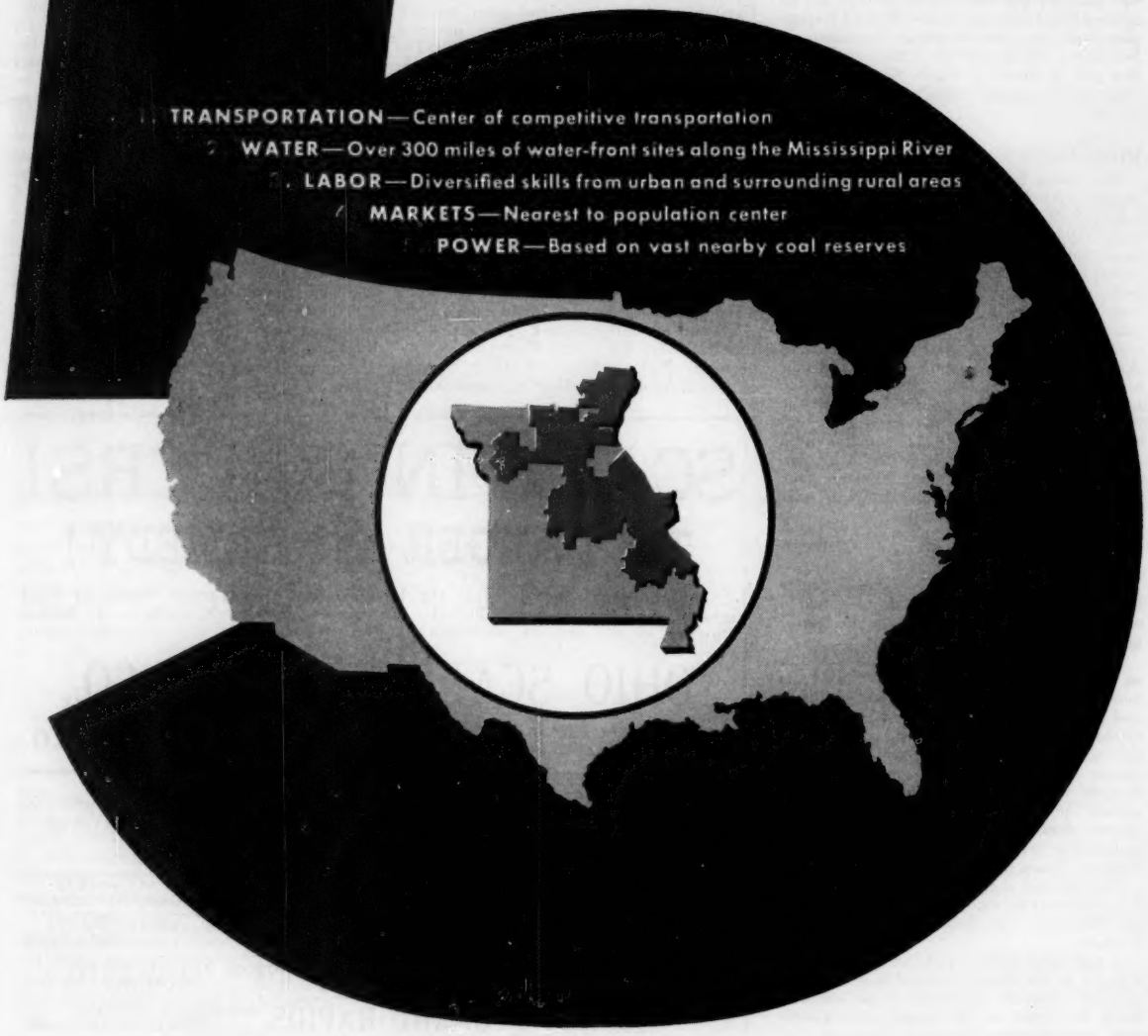

For plant site information

See: J. E. Johanson, Manager, Industrial Development

UNION ELECTRIC CO., 315 N. 12th Blvd., St. Louis 1, Missouri

Basic sciences such as cartography, meteorology, hydrology, pedology and geology are being applied to the study of possible plant locations. A consulting engineer gives here a description of the scientific approaches which will enable you to select a better site at lower cost.

SCIENCE IN SITE SELECTION

By Dr. Elio D'Appolonia

THE physical sciences of major use in the selection of a site are: (a) cartography, (b) meteorology, (c) hydrology, (d) pedology, and (e) geology. No attempt will be made in this limited space to describe or develop fully the basic concepts of each science. Rather, broad generalities as to the scope of the science and a random selection of a few physical phenomena of general interest will be discussed.

Cartography

This art-science deals with the making of maps. The word "maps" is used in the broad sense in that it implies any chart, diagram or otherwise that records the physical features or conditions of an area. This would include maps giving the topography, areal geology, superficial geology, ground water levels, climatic or hydrological conditions, stream patterns, transportation facilities, etc., of an area. Information for the making of the maps may be procured through ground surveys, photogrammetry or aerial mapping, soil boring and sampling, water wells, river gages, rain gages, and other instruments and schemes that are used to record physical conditions and phenomena.

Topographic and geologic maps contain many of the basic data needed for the planning of any engineering construction project, regardless of how large or small it may be. Geologic maps show the kind and shapes of the land forms and what may be expected when the underlying deposits are loaded with large or small structures.

Meteorology

This science deals with the recording and interpretation of climatic phenomena. By means of suitable instruments, continuous or intermittent records are maintained of precipitation, velocity and direction of air currents, frost-penetration, temperature, cloudiness, fog and other climatic conditions. It can readily be appreciated how cloudiness or fog could overrule the selection of a site when other factors would be in its favor. Along the northwest coast of both the United States and Canada, fog during certain periods of the year limits air travel into an area. This curtailment with certain industries could make such a site undesirable. In other areas of the northwest, it has been recorded that the sky is overcast for as much as five-sixths of the year. And though this factor may not be significant to the operation of the industry, it does have a certain psychological effect on personnel. Continually overcast areas are unattractive to people and the cost of labor is often higher than that in areas less cloudy.

Frost penetration of sufficient depth can both increase the cost of trench excavation and limit the period of optimum construction to a few short months during the summer and early fall. This is especially true in northern latitudes of Canada and Alaska where the average mean annual temperature is near freezing. The construction difficulties that arise with the permanently frozen ground of the north have become well-known in the last decade and a half.

Precipitation can control the period of optimum construction. In western Pennsylvania, Virginia and eastern Ohio, side-hill excavations for highways, utility lines, site expansion and such are plagued with landslides when the excavations are made in the late spring and early summer of the year. Interspersed in a disconnected manner throughout the soils (known as detritus) that blanket the slopes of the hills are thin lenses or layers of highly plastic soil. The detritus composed of rock fragments in a matrix of silt and clay was formed over a long, continuous cyclic process of localized erosion and deposition. Surface run-off carried fine particles of decomposed shale, sandy shale and indurated clay down the slope.

During periods of heavy run-off, coarse fragments of decomposed rock were embedded into the deposits of fine particles. This process of erosion and deposition, along with a natural downhill creep of the soil mantle and the leaching of fine sediments and salts into the underlying layers, produced a detritus of widely varying strength.

Detritus containing coarse fragments of decomposed rock exhibits relatively high shearing strength and excellent bearing capacity. The lenses of fine particles exhibit a good bear-

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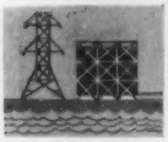

Power rates are among the lowest in the nation, with plentiful production from hydro and steam generating plants. Low-cost natural gas is supplied from municipally-owned fields and pipe-line imports. Water comes from City-owned wells and the Metropolitan Water District (Colorado River water) at most favorable rates. These utility advantages all add up on the profit side of your ledger.

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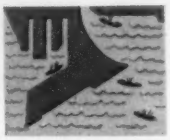

These same utilities — where needed — are available to shippers at the Port of Long Beach, plus the Port's many other advantages. For example, machines do the heavy work of lifting and moving cargoes. Ship booms, fork lifts, trailer train conveyors, and the great bulk-loader speed shipments. saving time and money.

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ing capacity but practically zero shearing strength. The natural creep or downward movement of a slope is directly related to the shearing strength of these lenses. If the rock formations at a site are predominantly shales and indurated clays, the number of lenses in the detritus is high and the slope is highly susceptible to creep movements. (Creep is an imperceptible and more or less continuous downward and outward movement of the detritus mantle.)

Ground Water

Under ordinary conditions of ground water, the weight of the detritus is carried wholly by the intergranular contact pressure between the soil particles. However, the shale and clay fragments of the detritus weakened by the weathering action of the ground water, especially after periods of sustained precipitation, are continually being decomposed into finer and finer soil particles.

As the soil fragments disintegrate, they momentarily cannot sustain the weight of the overlying soil mantle. The load is then transferred to the water in the void spaces. Since water has no shearing strength, the soil mass moves down the slope. This movement is only stopped when the soil particles interlock and again sustain the weight of the overlying soil mass.

During the movement of the slope, the lenses of fine particles in the detritus tend to develop slick surfaces. These surfaces become quite smooth and, when well-developed, are known as slickensides. Since there is a discontinuity, or surface separation, along the faces of a slickenside, there is relatively free movement of ground water through the slickenside. Detritus containing numerous slickensides often lacks sufficient strength to resist the down-slope pull of gravity.

When the detritus becomes saturated there is not only an increase in the weight of the soil mass but also a build-up of water pressure in the pores of the soil. This excess pore-water pressure reduces the shearing strength of the soil, which with the increase in the weight of the soil mass are sufficient to produce a major creep movement or landslide.

The movement of the detritus is closely related to the amount of precipitation. During dry years, the detritus lies dormant, while during the wet seasons, when the ground is saturated and the pore-water pressures are high, large movements occur. The movement of the detritus can be accelerated by some outside disturbance, such as the removal of the toe support or by changing the run-off characteristics of an area. The construction of side-hill cuts in detritus during the late spring and early summer are costly because of the precarious balance that is produced by the excess amount of water that saturates and moves through the soil mantle.

The location of a plant with relation to a community is important if obnoxious odors occur in the manufacture of the product. The direction of the prevailing winds in such a situation is significant in the proper location of the plant.

The amount of snow and ice and the cumulative degree-days below freezing have a direct bearing on the traffic of raw materials and finished product to and from a plant.

In studying the over-all economy of a plant, factors similar to the foregoing are often neglected in an evaluation and comparison of different sites. The economy to be gained or the advantage of one site over another can be properly made through the use of basic concepts and data of the physical sciences. A careful study of the factors that may appear insignificant will disclose the real worth of a site.

Hydrology

This science treats of the earth's surface and underground waters. Of special concern to the selection of a site is the availability and quantity of underground water. Both meteorology and geology have intrinsic roles in the application of this science.

Vast quantities of water move beneath the earth's surface in old buried stream channels. These channels are not readily discernible to the untrained eye. From a study of land forms, soil types and topography, geologists have, for example, located portions of the earliest known drainage system that extended over most of Ohio. The Teays drainage system flowed in a general southeast to northwest direction across Ohio with the major tributaries flowing to the southwest into the Teays. Continental ice sheets that invaded Ohio blocked the Teays and eventually brought about the drainage system of the Ohio River.

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NORTH CAROLINA

North Carolina's Business Man Governor Luther H. Hodges (left) with Walter M. Schwartz, Jr., President of Proctor Electric Company, survey Proctor's new electric toaster plant, the world's largest, at Mt. Airy, North Carolina.

For prompt and confidential plant location information you are invited to contact William P. Saunders, Director, Dept. of Conservation and Development, Raleigh, North Carolina.

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Many tributaries of old drainage systems are buried beneath soil deposits left by the glaciers. Sediments in many of the old buried channels are predominantly gravels and sands with lenses of fine soil particles of silt and clay. Where the alluvium is primarily sand and gravel, there is a relatively free movement of ground water and water wells that penetrate these deposits have a high yield of good quality water.

The abundant water supply in the valley basins of the Pittsburgh area is attributed to the outwash deposits laid down by the melt waters of the Wisconsin glacier. Pittsburgh, located at the confluence of the Allegheny and Monongahela Rivers, is well outside the area of glaciation. Yet, the fast-flowing melt waters laden with soil debris transported and deposited clean sands and gravels into the basins of the Allegheny and Ohio Rivers. Thick deposits of these relatively pervious soils were formed. At the confluence of the Monongahela and Allegheny Rivers, the sand and gravel outwash impounded the waters of the Monongahela. The sediments deposited in the quiet waters of the Monongahela were primarily silts and fine sands derived from the weathering of local material. Water wells drilled in the valley of the Monongahela have low yield, while wells drilled in the valley of the Allegheny and Ohio Rivers have high yield of good quality water.

Pedology

This science treats of the nature and property of soil with particular emphasis on the type of vegetation that occurs in different soils. To the pedologist, the thin layer of superficial material that blankets the bedrock is of primary concern. This mantle is continually subjected to a process of weathering, both chemical and physical. Climate, particularly temperature and amount and kind of precipitation, topography and parent rock from which the soil is derived play an important part in the pedologists' classification of the soil.

Soils that have undergone different processes of weathering and of different origin can be associated with certain types of plant growth. This feature, along with fundamentals in the use of land form, color tone, drainage pattern and other identifying features for predicting engineering properties of soils, have given the engineer a useful means of selecting sites from aerial photographs. Agricultural soil-survey maps, when used in conjunction with aerial maps, are important tools for reconnaissance and site selection. The proper interpretation of the information available on these maps is especially pertinent to the location of railways, highways, utilities, dams, and foundations for various structures in an industrial area.

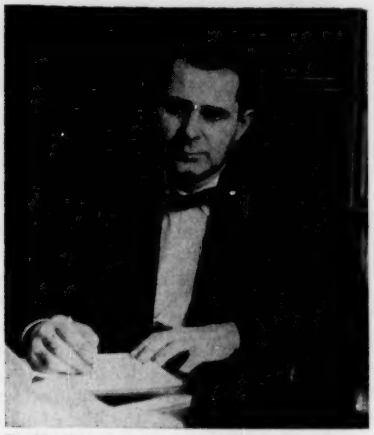
Soil and aerial maps are essential in establishing adequate sources of borrow material for construction.

Geology

This is the science of the earth. The branch of geology of particular interest in site selection is known as physical geology or geomorphology—the science that treats of the origin and systematic development of all types of land forms. Physical geology covers the nature and properties of the materials of which the earth is composed, the distribution of these materials and processes by which soils are formed, altered, eroded, transported and deposited and distorted. Soils are formed through a process of weathering that brings about both a chemical and physical breakup of the parent rock. The products of decomposition and disintegration are carried away, transported by running water, wind or glaciers. Depending upon changes in environment, the texture and properties of soils are continually altered.

Flat expanses of land in a valley that may appear ideal for site development often pose difficult and costly foundation problems. The broad plain may be a remnant of an old lake bed where the valley has been filled with fine sediments of silt and clay. Unless these deposits have been preconsolidated by vanished strata, ice or desiccation, the deposits a few feet below the ground surface are still in their original soft condition. These sediments are compressible and, when subjected to even light foundation loads, damaging settlement of a structure occurs.

Wind-blown deposits such as the sands found along the Atlantic coast are in a loose state. These deposits are generally uniform sands with practically little or no fine soil fractions of silt or clay. The sands have fairly good bearing capacity—provided the foundation loads are static in nature —and few difficulties arise in the



Dr. Elio D'Appolonia is principal engineer in the firm of E. D'Appolonia Associates, consulting foundation engineers, Pittsburgh. He received his A.B. and M.A. degrees from the University of Alberta and his Ph.D., C.E., from the University of Illinois. His report here is from a speech made at the 49th annual meeting of the American Railway Development Association in Cincinnati.

operation of a plant. However, when the loads are vibratory, stemming from railroad operations, reciprocating pumps or other heavy oscillating equipment, serious settlement of foundations placed on loose sands can occur. Under the vibratory forces, the sand particles are re-oriented into a dense state, resulting in a rather sudden reduction in the void spaces and settlement of the ground surface.

In regions of loose sand, structures with vibratory equipment are supported on piles by-passing the loose sand. Where practical, the loose sand prior to the construction of a building can be vibrated by methods of blasting, vibroflotation or other schemes into a dense state, producing a soil of adequate strength to support the structures without settlement.

Of real significance in the northern regions of the United States and all of Canada are the profound effects that glaciation has had on the sculpturing of the region. Continental ice sheets at four different periods of the Pleistocene age covered this vast northern expanse. As the ice sheet moved southward, it scraped and picked up the loose material above the solid rock. This debris was carried with the ice and deposited as ground moraine and till at great distances from its source. When the glaciers receded, ridges of varying size from ramparts hundreds of feet high to very low discontinuous ridges were formed, marking the furthest advance of the glacier. Melt waters from the glacier carried the boulders, gravel, sand and other fine soil particles outward from the glacier's margin forming outwash plains. In front of the melting glaciers, streams heavily loaded with reworked till or with material washed directly from the ice left a complex, braided pattern of channels. The streams flowing away from the ice and choked with clay, silt, sand and gravel rapidly deposited their loads, forming a vast apron of bedded sand and gravel. Other streams trapped in deeply eroded preglacial valleys deposited their coarse fragments near the front of the glacier and, with diminishing velocity of the water, the finer and finer particles are deposited at greater and greater distances from the glacier. These deposits, referred to as valley trains, are common in the tributaries of such rivers as the Susquehanna, Allegheny, Ohio, Missouri, Mississippi, and many others.

As mentioned earlier, these valley trains in the tributaries of the Allegheny and Ohio Rivers are excellent water-bearing deposits.

Wind-blown deposits known as loess are found over wide areas in the drainage basins of the Mississippi, Missouri, and Ohio Rivers. The deposits are formed from the fine particles picked up by the winds that swept across barren till and outwash plains left after the recession of the glaciers. Loess is composed predominantly of fine sand and silt held together with a clay binder. The deposits in a dry state exhibit good bearing strength. However, severe settlements occur in the loess when water permeates it. Dams located in valleys underlain by loess have undergone serious settlement during the impounding of the water in the reservoir. Failures of structures on loess that became saturated through faulty drains, sewer lines and downspouts from a roof have occurred with serious, and in some cases, total damage.

Land Forms

Associated with glaciers are land forms of varying description having peculiar characteristics that make certain sites ideal for industrial development and others entirely unsuitable. Where blocks of stagnant ice melted in front of a glacier, forming pits known as kettles, these depressions have become the location of swamps

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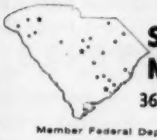

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or lakes that are filled with fine sediment and are entirely unsuitable for industrial development. Kames, relatively steep-sided hills that occur as isolated mounds or in clusters, and kame terraces containing deposits of stratified drift that was laid down between the wasting glacier and the adjacent valley wall, often contain excellent borrow material for highway or railroad construction. The kame terraces are usually excellent sites for the location of industry.

Lakes formed between the front of the melting ice and the terminal moraine contain fine sediments that have not been preloaded. These apparently flat expanses of land pose serious foundation problems in industrial development. The lake sediments rarely yield adequate water supply and unless they are underlain by stratified glacial deposits, the water supply for industry located on these old lake bottoms has to be obtained from the underlying rock formations.

Of particular importance to the foundation engineer is the preloading of an area that has occurred under the weight of the advancing glacier. Soils preloaded by ice have excellent bearing strength and the sites are ideal for industrial development. Many preloaded deposits are exposed in glaciated areas, and where preloading has occurred, extensive soil drilling and sampling to determine the properties of such fine-grained deposits as silt and clay are not necessary.

In this short discussion, no attempt was made to cover all of the various aspects of geomorphology. Rather, the attempt has been to give some insight into the soil types and soil properties that would be found under different processes of weathering and when soil has been subjected to different agents of transportation and deposition. All aspects of land sculpturing have a pronounced influence on the type and behavior of a soil to load and on its hydraulic characteristics. A proper evaluation of the history of a soil can greatly influence preliminary decisions as to the suitability of a site for industrial development. In certain cases, what may appear to be an excellent site from topography and location may be entirely unsuitable because of poor foundation conditions and lack of ground water. The opposite is also true. Hilly, rough terrain which at first sight may appear entirely undesirable may have excellent sources of ground water and have ideal conditions for the construction of the foundations for an industrial plant. Each site has to be evaluated and studied on its own merits. All aspects of the science of geomorphology have to be carefully correlated and interpreted in order to obtain maximum insight into the feasibility of a site for industrial use.

A knowledge of the earth sciences is essential for the selection of a site with reasonable assurance that there is adequate water for industrial growth and that the construction of the foundations supporting the various structures can be made with maximum economy, safety and practicality. A cognizance of the interrelations between the earth sciences is necessary. Data obtained from one science supplement that from another. Or data from one science may provide information that is lacking in another science. It is important to know where and how to gather, correlate and interpret the data from each science as it applies to the whole problem of site selection. A study of ground water divorced from geology too often yields negative results. An evaluation of the susceptibility of an area to slides must take into consideration precipitation, ground water and its movement as well as the texture and properties of the soil.

The selection of a site made through an integrated study of the data available in each earth science will:

(1) Reduce the cost of exploration of the site for both an evaluation of the availability of water and suitability of the soils for foundations;

(2) Give a reasonable estimate of the cost of the potential growth of a site with relation to water supply and foundations regardless of the type of structures to be constructed;

(3) Give the feasibility of the site for industrial development in measure far beyond that obtained solely from a field trip to the site, or from aerial maps alone;

(4) Enable the engineer to make pre-

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liminary designs and layout of the building foundations and estimates of the amount of water available for operation of the plant;

(5) Enable the planners to prepare a preliminary schedule of construction, giving time of year and conditions under which construction would be optimum, which would result in minimum cost and delays.

Each of the earth sciences—cartography, meteorology, hydrology, pedology and geology—is interrelated. They should not be considered separately in evaluating the feasibility and suitability of a site. They must be used as an integrated group in order to obtain reliable engineering data for the selection of a site for industrial development.

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An aerial view shows the big new sea water conversion plant which recently went into operation on the Island Territory of Aruba, Netherlands Antilles. In the foreground are the evaporator lines, and the water storage tanks are just behind.

FRESH WATER

NEW YORK. The world's largest single installation to convert sea water to fresh water is now producing on the Island Territory of Aruba, Netherlands Antilles.

The water provided by the huge facility will make possible industrial growth and a general economic improvement that could not have occurred if the area were dependent upon rainfall alone.

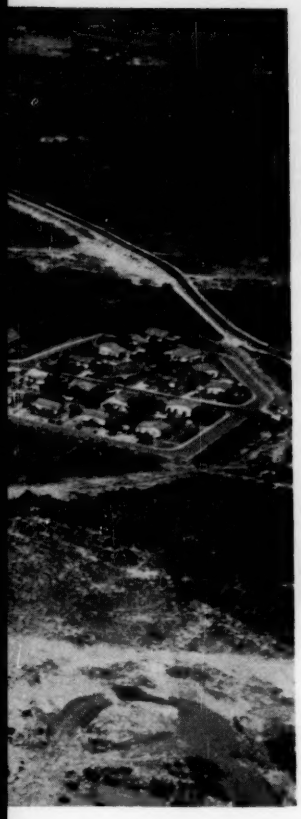
The plant, owned by the government of the 70-square-mile Caribbean island territory, cost $10 million to build. It was designed and constructed by Singmaster & Breyer, New York engineers.

The firm reported here that the facility is the first to combine salt water distillation with production of marketable surplus electricity which also will aid industrial development.

It was asserted by the engineering organization that the lowered costs resulting from this unique process mark a major step forward in man's quest for inexpensive drinking water from the ocean.

Total capacity of the new plant, which replaces a smaller and obsolete unit, is 2,700,000 gallons per day of distilled water. This is more than enough to supply the potable water requirements of both Aruba's population of 55,000, and its major industry —the American-owned Lago Oil & Transport Company, Ltd. refinery, one of the world's largest, with a rated crude capacity of 440,000 barrels per day.

Aruban officials predict that the surplus of water and electricity available from the installation will be a considerable factor in rapid development of



The limitless resources of water in the world's great oceans are virtually certain to provide, through special processing, the key to economic development in the future for many areas that are now marginal or even untenable. A huge new sea water distillation plant in operation on the island of Aruba proves the practicality of this point.

FROM THE SEA

the island, whose rainfall averages less than fifteen inches annually. A twelve acre hydroponics farm has already been built; most of the fresh vegetables and fruits served locally will be products of this farm.

In place of soil and rain, the farm uses only distilled water and carefully proportioned nutrient chemicals. Water from the plant is also essential to Aruba's multi-million dollar resort development, which includes a new 125 room luxury hotel and several beach clubs.

Prime reason for lowered water cost is the use of a steam electric plant in conjunction with the distillation units. As in conventional power plants, steam generated in high pressure boilers has most of its energy converted to electricity which can be sold. The exhaust steam from the turbine is not condensed at Aruba, however, but is used to distill the sea water.

Cost figures for water from the new plant have not been released, but Aruban Government estimates indicate a production cost of about $1.75 per 1000 gallons. When the turbo-generators with their 15,000 kilowatt maximum output go into operation later in the year, exact water cost data reflecting power revenues will be available. These data, as well as the plant's revenues will be available. These data, as well as the plant's impact upon the island's economy, will be closely examined by planners in regions faced with water shortage problems.

Singmaster & Breyer, New York engineers, who designed and constructed the plant, are affiliated with The Fluor Corporation, Ltd. of Los Angeles California.

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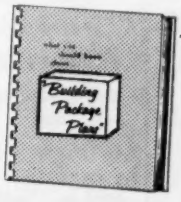

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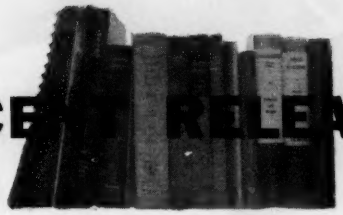

By Suzanne Johnson

Announcement of A National Commission on Money and Credit. Contains the by-laws of the Commission, statement of scope and biographical sketches of the members. Committee for Economic Development, 711 5th Avenue, New York 22, New York. 30 pages.

A Selected Bibliography of Research and Development and Its Impact on The Economy. Office of Special Studies, National Science Foundation, Washington, D. C. 21 pages.

The New Highways: Challenge to the Metropolitan Region. A series of selected papers prepared as background for a Symposium sponsored by Connecticut General Life Insurance Company, Urban Land Institute, 1200—18th Street, N.W., Washington D. C. 92 pages. $3.00.

Southern Association of State Planning and Development Agencies, Point Clear Conference, October, 1957. A transcript of the talks given. Mr. H. K. Francis, c/o Alabama State Planning and Industrial Development Board, 711 High Street, Montgomery, Alabama. 50 pages.

Chemical Economics Handbook. June installment. Stanford Research Institute, Menlo Park, California. 150 pages

Investment Banking Functions, by Merwin H. Waterman. This book seeks to tell what investment banking can do to facilitate the capital raising process, how investment bankers can perform their functions more effectively, the strengths and weaknesses of syndicate operations, and how investment banking fits into the director placement of and competitive bidding for corporate securities. School of Business Administration, University of Michigan, Ann Arbor. 186 pages $4.00.

Assets, Liabilities, and Capital Accounts Commercial and Mutual Savings Banks, December 31, 1957. Report No. 48. Federal Deposit Insurance Corporation, Washington 25, D. C. 58 pages.

A Practical Guide to On-The-Job Training by Herbert Engel. Small Business Bulletin No. 3. Published by New York State Department of Commerce, 122 State Street, Albany, New York. Chapter headings include "What Will Be Taught The Trainee?", "Where Will Training Be Given?", "When Will Training Be Given?", "How Will the Complete Course Be Given?", "Trainee Selection." 56 pages.

Area Development Bulletin, April-May, 1958. Superintendent of Documents, Government Printing Office, Washington 25, D. C. 8 pages 10 cents.

Electric Power . . . And The Electric Utility Company's Part in Industrial Development. Speech presented by W. W. Lynch, President of Texas Power & Light Company before the Plant Location Conference of the American Management Association, 1515 Broadway, New York 36, New York. 24 pages.

General Statistics For Standard Metropolitan Areas With 40,000 or more Manufacturing Employees. By Major Industry Groups: 1956, 1955, 1954 and 1947. Bureau of the Census, Washington 25, D. C. 29 pages. 25 cents.

General Statistics for Geographic Divisions and States by Major Industry Groups: 1956, 1955, 1954 and 1947. Bureau of the Census, Washington 25, D. C. 27 pages 25 cents.

Area Data File Checklist

The City and Port of Halifax. A pictorial and statistical brochure of shipping services and industrial facilities of the city. The Halifax Industrial Development Commission, Halifax, Nova Scotia, Canada. 10 pages.

Your Site In The Great Industrial Valley of East Tennessee. A site file with photographs and maps of some 60 available sites in this area, ranging from small acreage to sites of 1,000 or more acres. Committee of 100, Knoxville Chamber of Commerce, 918 Gay Street, S. W., Knoxville, Tennessee. 70 pages.

"Alberta — Province of Opportunity." A survey of the resources and facilities offered to industry by the Province of Alberta, of its present industrialization, and of future probable growth and industrial opportunities in the Province.

The purpose of the comprehensive study is to interest industrialists in the many opportunities that Alberta offers, to provide background material for all those who wish to be better informed about Alberta, and to aid in planning the power facilities of the province.

The book contains a relief map, in color, of the area, and it has a profusion of charts as well as other maps to illustrate major points in the editorial material. Calgary Power, Ltd., Calgary, Alberta, Canada. 301 pages.

"Partners In Growth." Proceedings of the Second Annual Industrial Development Conference of the Honolulu Chamber of Commerce. Available from Honolulu Chamber of Commerce, Dillingham Building, Honolulu 13, Hawaii. 86 pages.

Tour of Kentucky's Ohio River Industrial Sites. This book serves as a guide to the territory covered on an actual tour. It contains statistical summaries of the cities and towns near the industrial sites which were covered by the tour. All sites are shown on scaled topographic maps. Department of Economic Development, Commonwealth of Kentucky, Frankfort, Kentucky. 106 pages.

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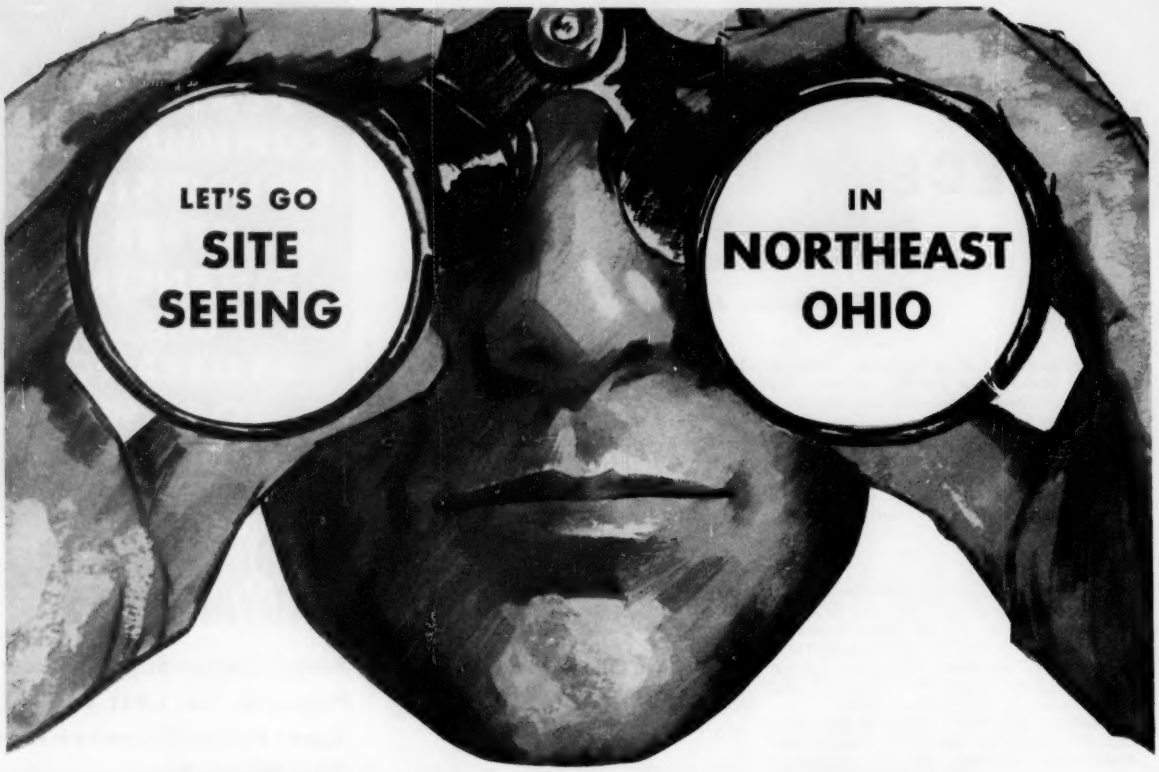

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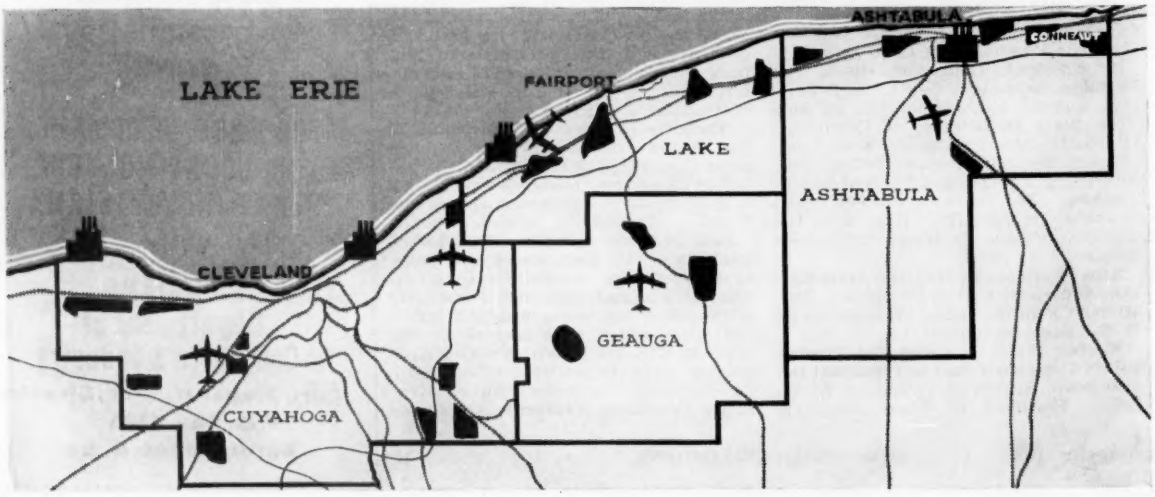

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SEPTEMBER 1958

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There may be sound reasons why you should wish to obtain preliminary information on possible sites without revealing your interest or identity. Recognizing this, INDUSTRIAL DEVELOPMENT offers a Secret Site Service to readers who hold positions of responsibility with manufacturers or other business firms having a legitimate interest in sites. This service is offered in cooperation with the development agencies whose advertisements you see in this issue. Here's how the plan works:

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LIST YOUR REQUIREMENTS AS SPECIFICALLY AS POSSIBLE

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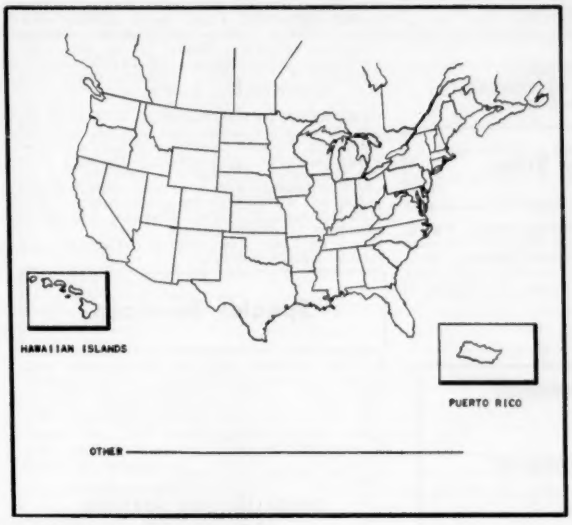

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( ) Desire to rent existing building, occupancy in ..... days.

( ) Desire to buy existing building, occupancy in ..... days.

( ) Want local group to erect building to our specs. and lease to us.

( ) Expect local group to provide bldg. below cost or gratis as inducement.

( ) Will eerct own bldg. but interested in aid in mortgage financing.

( ) Will assume complete responsibility for building and financing.

BUILDING SPECIFICATIONS

Floor area ..... sq. ft. Ceiling clearance ..... ft.

Special requirements .....

TYPE OF SITE DESIRED

( ) Rural, adjacent to community with population less than .....

( ) Urban, in planned and restricted industrial district if possible.

( ) Water process, on stream with minimum flow of ..... gal./min.

( ) Dispersed, well removed from target areas or cities, for defense work.

( ) Other .....

TRANSPORTATION SERVICES

( ) Rail siding required. Estimated annual tonnage .....

( ) Trucking service required. ( ) Adjacent to major highway.

( ) Airport for ( ) passenger service ( ) freight

( ) executive airplanes.

( ) Water transport ( ) barge ( ) ocean-going.

UTILITIES

( ) Electric power. Ultimate total load ..... kw.
Special demands .....

( ) Water. Required supply ..... gal./min. at ..... psi.
Special demands .....

( ) Natural gas. Demand ..... cu. ft./day.
Special demands .....

( ) Sewage. Special demands .....

LABOR

( ) Union shop. ( ) Non-union shop. ( ) Depending on location.

Skilled males ..... Semi-skilled males ..... Unskilled males .....

Skilled females ..... Semi-skilled females ..... Unskilled females .....

Special factors .....

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List principal items which influence your location economics:

.....

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Dun & Bradstreet rating .....

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Industrial Districts

The following planned industrial districts have sites available for immediate construction. Advantages offered by such districts are described in detail in the November-December 1954 issue, pages 6, 7, and 8.

Services offered are indicated by the following code: (A) Architect & Engineer; (C) Construction; (E) Electric Power; (G) Natural Gas; (F) Financing; (P) Paved Streets; (R) Rail Siding; (S) Sewers; (T) Telephone; (W) Water.

Iowa

Iowa "Manufacturing Meadows" — Clinton, Iowa (population 35,000), 138 miles west of Chicago on Mississippi River and Lincoln Highway (U. S. 30). 190 acres within city. Master plan by Skidmore, Owings & Merrill. Served by Chicago and Northwestern Railroad. Developed by Clinton Development Company, a civic-non-profit corporation. CHapel 2-4536, R. J. Stapleton, Managing Director. Services available: (a) (optional), (c), (e), (g), (f) (optional), (p), (r), (t), (w), restrictions.

Missouri

PAGE INDUSTRIAL CENTER — St. Louis—a planned industrial park, developed by Page Industrial Center, Inc., 7811 Carondelet, St. Louis 5, Mo., Edward L. Bakewell, Realtor, phone CEntral 1-5555, served by Rock Island Railroad, 60 acres with all services available on property. Restrictions.

Georgia

METROPOLITAN ATLANTA — Five Industrial Districts offering planned sites of varying location, size, price. Services available: (A) optional, (C), (E), (G), (F) optional, (P), (R), (S), (T), (W). In your Southeastern plant or warehouse survey contact: F. Wm. Broome, Industrial Manager, DeKalb County C of C, 250 E. Ponce de Leon Ave., Decatur, Ga. (Atlanta phone, DRake 8-3691).

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SALISBURY, N. C.—Freeway sites with all utilities and rail or nearby large tracts on Yadkin River. NEW Fantus engineering study confirms profit and pleasant living in community. NEW airport (4200′ x 100′) paved; NEW Holiday Inn (const.); NEW "Y"; NEW schools; NEW shopping center; NEW outlook among people. Contact: William P. Pence, Mgr., C of C, ME 3-4221 or Box 559.

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INDEX OF ADVERTISERS

Alabama Power Co. ..... 3rd Cover
Agency—Tom Little & Associates
American Creosote Works, Inc. 52
Direct
Anaheim Truck & Transfer Co. 26
Direct
Anniston Chamber of Commerce .. 5
Agency—Nottingham, Inc.
Associated Chambers of Commerce of Orange County 35
Direct
Atlantic Steel Co. 46
Agency—Lowe & Stevens
William M. Bailey Co. 48
Agency—Downing Industrial Advertising, Inc.
Baltimore & Ohio Railroad Co. ... 24
Agency—Richard A. Foley
Bank of America 40
Agency—Johnson & Lewis
Frank G. Binswanger, Inc. 4
Agency—Shaw & Schreiber, Inc.
Buena Park Chamber of Commerce 39
Buffalo Tank Corp. 51
Agency—George Homer Martin Associates
Greater Burlington Industrial Corp. . 62
Agency—Joseph Smith, Advertising
Calgary Power Ltd. 5
Agency—James Lovick & Co., Ltd.
Chicago & North Western Railway . 16
Agency—The Caples Co.
Cleveland Electric Illuminating Co. . 68
Agency—McCann-Erickson, Inc.
De Leuw Cather & Co. 71
Direct
Robert G. Denmead 71
Direct
Diamond Mfg. Co. 43
Agency—Frederick B. Garrahan
Feist & Feist 71
Direct
First Research Corp. 70
Direct
Fluidmaster, Inc. 31
Direct
Ford, Bacon & Davis 71
Agency—Victor A. Smith
L. B. Foster Co. 52
Agency—Lando Advertising Agency
Grand Central Industrial Centre ... 2
Direct
Graphic Systems 4
Agency—Diener & Dorskind, Inc.
Greer Engineering Associates 60
Direct
Greer-Jewell & Associates 60
Direct
Gustave M. Goldsmith 71
Direct
A. Jay Hofmann Co. 71
Direct
Industrial Enterprises, Inc. 37
Direct
Industrial Sound Films, Inc. 20
Direct
Johnson City Industrial Commission 15
Agency—McRae & Bealer, Inc.
Reginald F. Keller Real Estate 39
Direct
Kinnear Mfg. Co. 54
Agency—Wheeler, Kight & Gainey
La Salle-Peru-Oglesby-Sprnig Valley Chamber of Commerce 65
Agency—Kenneth B. Butler & Associates
Lewis Terminals, Inc. 14
Agency—Power Advertising
Lockwood Greene Engineers, Inc. .. 71
Direct
Long Beach Chamber of Commerce 58
Agency—Patch & Curtis, Advertising
Louisiana Dept. of Commerce & Industry 67
Agency—Gordon Adv. Co.
Mississippi Valley Gas Co. 60
Agency—Godwin Advertising Agency
Monroe Area Industrial Development Corp. 4
Agency—Shell Advertising
New Haven Railroad 4
Agency—Cayton, Inc., Advertising
Newport Harbor Board of Realtors . 28
Direct
North Carolina Dept. of Conservation and Development 59
Agency—Ayer & Gillett
Orange County Industrial Developers, Inc. 37
Direct
Palmer & Baker Engineers, Inc. 71
Direct
Parsons, Brinckerhoff, Hall & MacDonald 71
Direct
Philadelphia Dept. of Commerce ... 63
Agency—The Beacon Agency, Inc.
J. R. Prevette & Associates 71
Direct
Problemsolver 71
Direct
Procter-Ingels 71
Direct
Real Estate Management, Inc. 71
Direct
Byron Reed Co., Inc. 71
Direct
Reynolds Associates 71
Direct
St. Petersburg Chamber of Commerce ..... 2nd Cover
Agency—Alfred L. Lino & Associates
San Jacinto Industrial District 4th Cover
Agency—Rominger Advertising
Santa Ana Chamber 34
Direct
Sauereisen Cements Co. 49
Agency—The Advertising Company of William Cohen
Walter Schmid 36
Direct
South Carolina National Bank 61
Agency—Bradley, Graham & Hamby
Southeastern Plastics Sales Co. 51
Direct
Southern Business Letter 66
Southern Co. 44, 45
Agency—Liller, Neal & Battle
Southern Lightweight Aggregate Co. 49
Agency—Cabell Eanes, Inc.
Southern Railway System 12, 13
Agency—Cunningham & Walsh
Southwestern Electric Service Co. .. 61
Agency—Rominger Advertising
Texas Power & Light Co. 64
Agency—Don L. Baxter, Inc.
Toronto Industrial Leaseholds, Ltd. . 65
Agency—Muter, Frankfurter, Culiner & Gould
Union Electric Co. 56
Agency—Gardner Advertising Agency
Hyman Viener & Sons 49
Agency—Eastern Associates, Inc.
Virginia Electric & Power Co. 22
Agency—Cargill & Wilson, Inc.
Way Realty Co. 71
Direct
West Texas Utilities Co. 1
Agency—Curtis Taulbee Advertising
Windsor Properties, Inc. 5
Agency—Rominger Advertising Agency

The Colonel Says

DISAGREE?

Dare you disagree with your boss? Even though he declares that he doesn't want to be surrounded with "yes men," does he turn slightly livid when you come up with some comment like, "I can't see this thing your way"?

Well, for those who have had that happen, the Bureau of Business Practice, a division of Vision Incorporated, has worked out some fascinating suggestions that may be helpful on how to disagree with the man in the big office and get away with it.

The bureau listed eight different rules on this disagreement business—all serious and deadpan—including such admonitions as: Don't disagree when the boss is feeling irascible, don't disagree when others are around, and don't use such words as "idiotic," "ridiculous," or "nonsense," in expressing your reaction to other's ideas, etc.

The delicate suggestion also was made that it may be the pattern of discretion not to ask the boss for an unmistakable statement that he has reversed himself.

But, without going into further detail, we think that the Bureau's final suggestion is the bell-ringer. It's boiled down into this simple sentence: "Unless a differing opinion is of real importance, it is usually wise to avoid disagreeing at all."

Shucks, we found that out years ago, didn't you?

* * *

ELK EXHIBIT

When we praised an elk displayed in natural habitat in the Springfield, Massachusetts, Museum of Natural History, the attendant told us an interesting story of its origin. It seems that an unimpressive little man made regular visits to the museum, often bringing his lunch in a paper bag. His out-of-style clothes suggested that he was a retired professor or just a poor man who loved the exhibits.

One day the unobtrusive visitor inquired why the museum had no moose or elk exhibit. He was told that the budget would not permit the addition, as estimates having been given to the museum gave the cost at about $30,000.

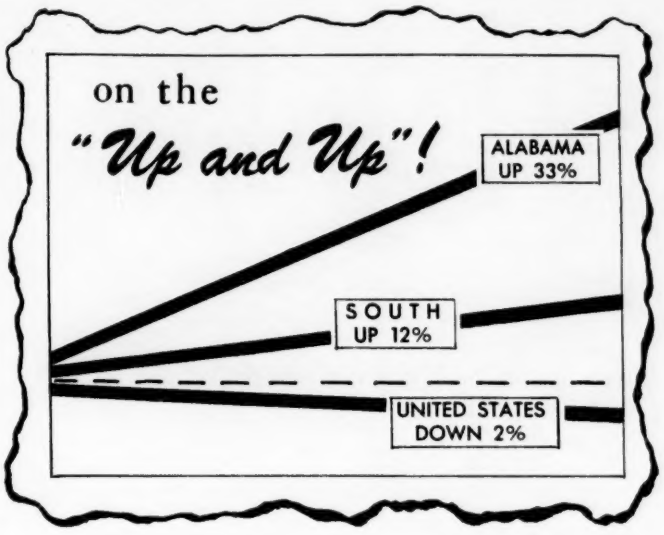
Indignantly, the little man retorted, "I won't pay a nickel over $25,000. We can get a fine elk for that!"

And he did. And that's how Springfield's museum got an elk.

* * *

GOOD DIRECTION

It has been said by someone very wise that the man who laughs at the boss's jokes does not necessarily have a sense of humor but he surely has a sense of direction!



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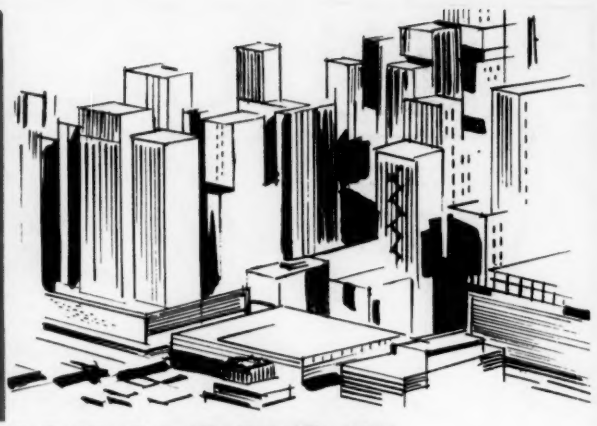

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